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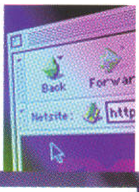

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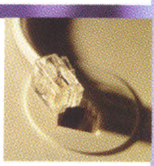

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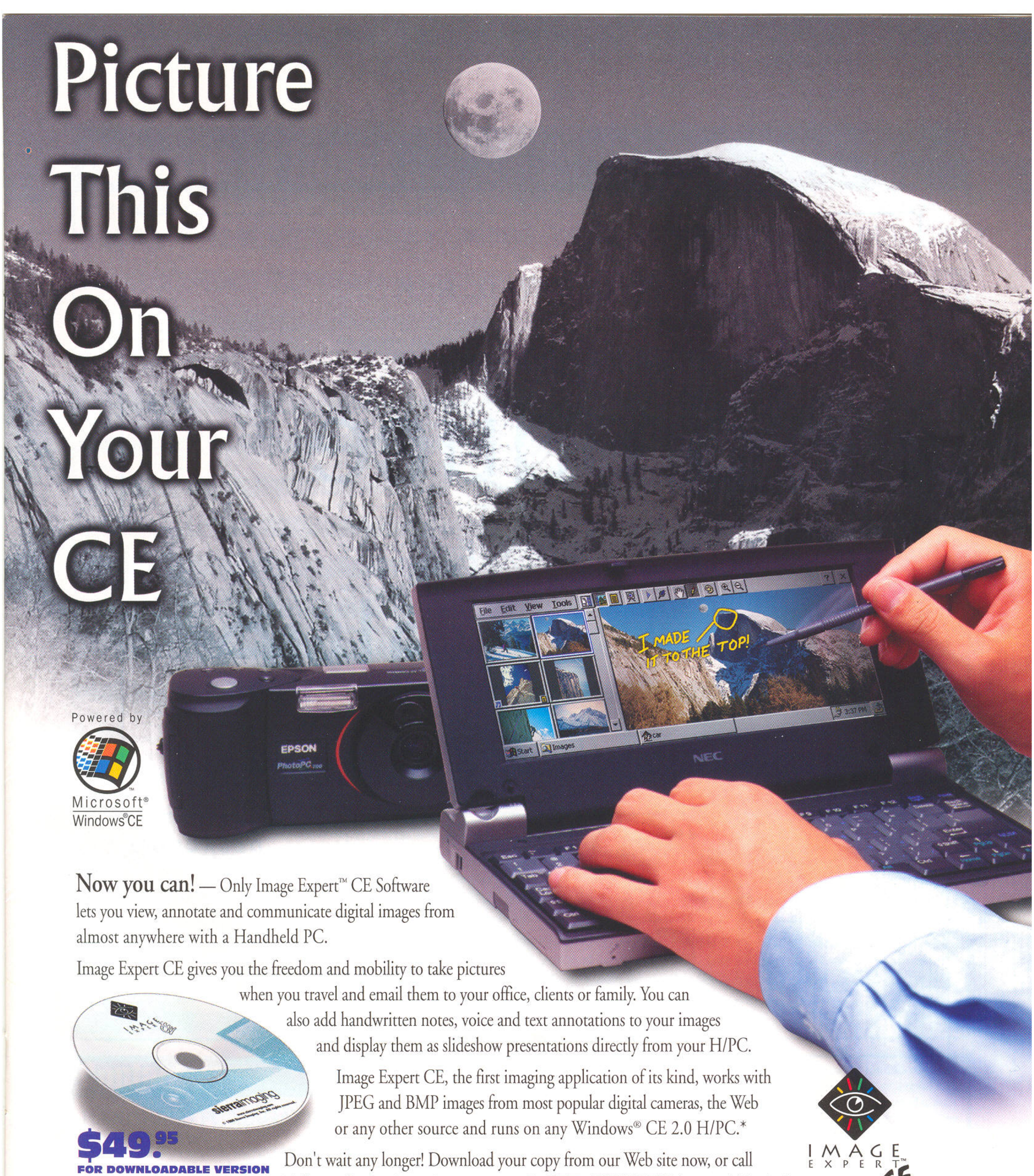

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DELACROIX

DEAR WINDOWS CE CUSTOMER:

Powered by Microsoft® Windows CE

On behalf of Microsoft®, I would like to thank you for your support of the Microsoft Windows® CE platform. Since the introduction of Windows CE in November 1996, we've seen great advancements in handheld computing devices including the support of color, high resolution graphics and digital audio. My team at Microsoft is dedicated to building innovative platforms so that you can be more productive, more connected, and have more fun.

At Microsoft, we believe in empowering people to access information anytime, anywhere. I would like to share with you two recent Windows CE announcements, available this Fall, that will help you keep your personal information up-to-date and close at hand.

First, we're really excited to introduce **ActiveSync™ 3.0** technology — a totally new version of the desktop connectivity software that replaces the version of Windows CE Services you are currently using. ActiveSync 3.0 gives you an improved user interface with simpler prompts and messages, automatic support of the highest possible transfer rate, and better integration with all current versions of the Windows operating system. I am pleased to inform you that Microsoft is making ActiveSync 3.0 available as a free download off the Web, as well as through the company who manufactured your Palm-size PC or Handheld PC. ActiveSync 3.0 supports all devices running Windows CE 2.0 and later. I recommend that you go to **www.microsoft.com/windowsce/activesync** and download your free copy today.

Second, Microsoft has been working closely with other leading companies to assemble a **wireless communications kit** (available this Fall). Staying connected to your information while away from your office is fundamental to your productivity. Now you will be able to use your Windows CE-based Palm-size PC or Handheld PC with a data-capable digital cell phone to send and receive e-mail, synchronize your calendar, and access Web-based information. For more information on the kit and wireless service, please go to **www.microsoft.com/windowsce/wck**.

Microsoft is committed to enabling world-class mobile solutions to suit your business and personal needs. Microsoft and companies like Casio, Compaq, Hewlett-Packard, IBM, NEC, Philips, Sharp, and others are building innovative products to move the mobile computing industry forward. Stay tuned for more exciting Windows CE announcements in the coming year.

Best regards,

Harel Kodesh
Vice President
Productivity Appliance Division

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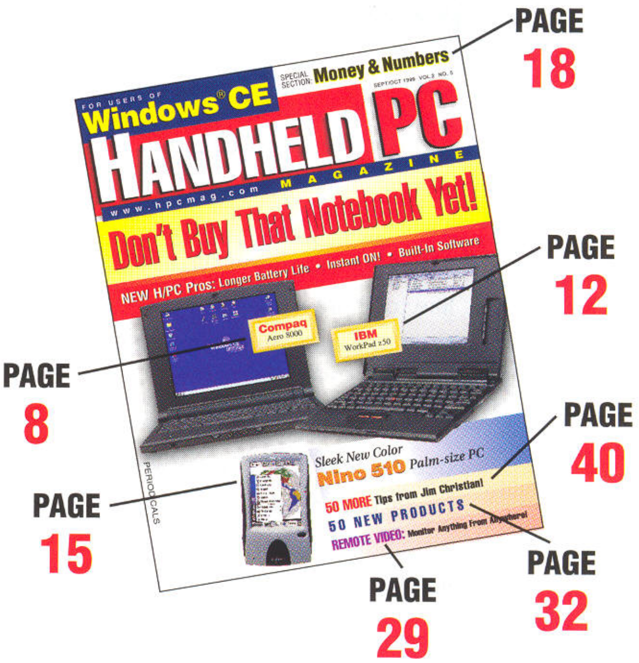
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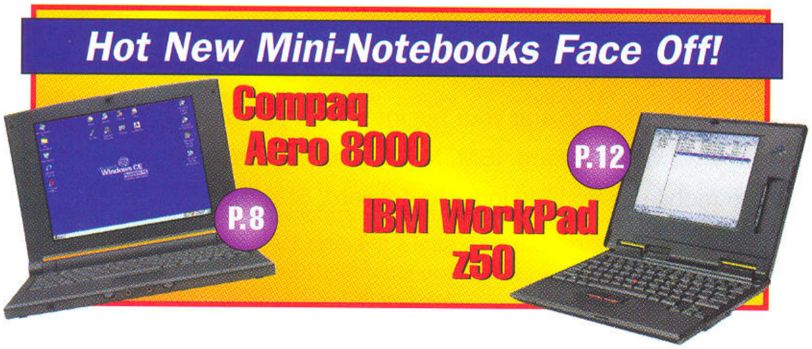
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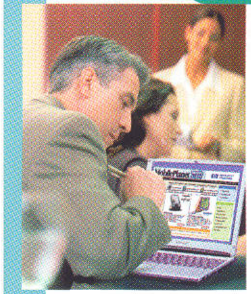

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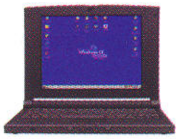

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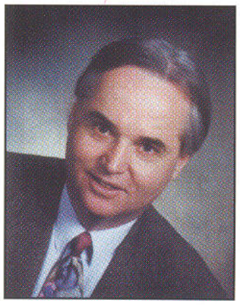

From The Editor

Rich Hall

New technology starts out as a relatively obscure and difficult-to-use solution to a problem. Adopted by visionaries, it proves itself in a few cases, is improved upon, gains wider acceptance, and finally becomes commonplace. Computers started out as complex and expensive arrays of vacuum tubes. They have evolved into inexpensive powerhouses that slip into your pocket. But between the vacuum tubes and PC Companions, the cycle of technology has played itself out again and again.

The original Windows CE H/PCs, introduced over two years ago, were relatively inexpensive and easy to operate. Because of that, and because similar devices had been on the market for years, Microsoft and the device manufacturers tried to market H/PCs directly to end users. They weren't as successful as they'd hoped. Many end users didn't know what to make of the H/PC. It looked like a notebook computer only much smaller. Yes, you could carry it with you easily, but using the keyboard was a challenge. True, it was a Windows machine, but you couldn't run desktop Windows applications on it. And it did have a lot of nice built-in applications, but they lacked needed features.

Microsoft looped back on the technology cycle to improve the operating system and built-in applications, and in conjunction with manufacturers introduced new devices such as the Palm-size PC and most recently the Handheld PC Pro. What I notice most about the newer devices is that they look very familiar. For example, the Nino 510 Palm-size PC looks and functions a lot like pen-entry Personal Information Managers, such as the 3COM Palm or Apple Newton. And most of the H/PC Pros look like small notebook computers. Take a look at the two H/PC Pros we review in this issue: The Compaq Aero 8000 and the IBM WorkPad z50. Both have big color screens; both have large, easy-to-use keyboards; and both include a pointing device instead of a touchscreen. They are both on the cover of this issue, and they both look like notebook PCs.

Both the Aero 8000 and WorkPad z50 also come with add-on software that makes it easy to integrate them into an enterprise setting. Compaq and IBM are happy to sell individual units, but they clearly want to capture the corporate high ground. The add-on software helps in both cases. And when you're talking to a corporate MIS executive about 1,000 H/PC Pros, familiarity has its advantages. For example, instead of trying to define a new category of computer, you can simply say that an H/PC Pro is "like a notebook computer, only it's smaller, faster, less expensive, has a better battery life, requires less maintenance, and has all the necessary applications built in."

I think a familiar form factor that is easy to integrate into the corporate environment will eventually benefit the end user. If large organizations adopt PC Companions, thousands of individuals become new Windows CE end users. As they learn to master their new devices, many become dedicated users of the device and end up purchasing Windows CE devices for themselves. As the user base grows, Microsoft and the manufacturers have the finances necessary to continue to improve the operating system, built-in applications, and hardware. The success also fuels the development of applications and hardware accessories from independent developers.

Rich Hall

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Become a Windows CE Expert 5 Minutes at a Time!

Jim Christian's
Master CE CD from Handheld PC Magazine

400 Great Ideas

In the past few months Associate Editor, Jim Christian compiled over 400 tips, tricks and insights on how to make better use of your Handheld or Palm-size PC. (See Jim's column, page 40.) Many of these tips contain descriptions of freeware and shareware, others include URL's of useful Web sites. And the tips are great—you can read one in a few minutes. Once you download them to your handheld, you can read them wherever you are, whenever it's convenient. 5 minutes at a time, you'll become a Windows CE expert.

On the Web and on the Master CE CD

Jim suggested we put all the tips on our Web site www.hpcmag.com, and at the same time package them as a CD. "The CD saves time for our busy readers," Jim said. "On the CD the tips, most of the software, and all Web sites will be instantly available."

We Couldn't Keep Up

Great idea! But Jim sent them in so fast, we couldn't keep up. We spent weeks categorizing, testing URLs, downloading software, and getting permission to include software. Even now, a few tips will soon be out of date and some others need more verification and editing. But we couldn't wait. We wanted to get the information to you right away.

So We Lowered the Price!

We decided to offer the CD as it is at a greatly reduced price. Instead of selling it for $39.95; we offer this CD with 400 tips, 200 URL's; and over 50 freeware and shareware programs for only $24.95. Some of the tips are tricky—you'll really have to know what you're doing to benefit from them. But most of the ideas can be put to use easily. And the software alone can really change the way you maximize your CE device.

We think you'll find the CD offers incredibly useful bite-size chunks of information to increase your enjoyment and effectiveness with your PC Companion. Using it, you'll become an expert with Windows CE.

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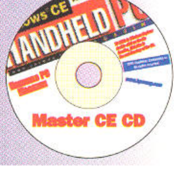

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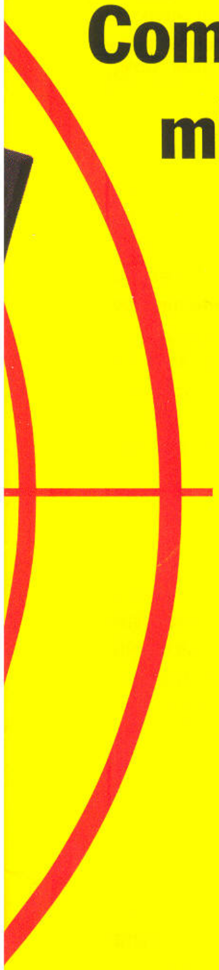
Corporate Market

Compaq's new color-screen Windows CE mini-notebook competes for its share of the corporate market.



BY RICH HALL

Sitting on my desk is a silver-and-black clamshell computer. If I didn't know better, I'd say I was looking at a somewhat small notebook computer. I open it up and my initial impression is reinforced. It has an almost full-sized keyboard; a large and easy-to-read color display; and a small pointing device known as a "touchpad" located below the spacebar. Finally, I press the power-on button and the illusion is shattered. The familiar Windows desktop appears, but in the middle of it are the words "Windows CE." I'm looking at the latest entry in the competition for the Windows CE enterprise solution – the Compaq Aero 8000 Handheld PC Pro.

The Aero 8000 is Compaq's first H/PC Pro, and a big departure from its pocket-sized "C-series" H/PCs. The Aero is one of the largest Windows CE devices I've seen, measuring 11 x 8.6 x 1 inches and weighing 2.9 pounds. It sports a 128 MHz processor and comes with 16 MB of RAM, expandable to 64 MB. The Aero has a large 10" 800x600 color display that is quite easy to see indoors. Like the IBM H/PC Pro, the Aero 8000 does not have a touchscreen. Instead, it uses a "touchpad" pointing device. I prefer a touchscreen but could (grudgingly) adapt to this type of pointing device. It's a tradeoff made for improved screen visibility and battery life.

The Aero 8000 comes with the hardware features necessary for corporate acceptance, including a built-in 56 Kbps modem, serial port, fast IrDA port, VGA-out and PS/2 mouse/keyboard ports, a PC Card (Type II) slot, 2 CompactFlash slots (one Type I, one Type II), a headphone jack and a Smart Card reader (more on this below). It is powered by either an AC adapter or an internal Lithium Ion rechargeable battery that gets up to 7 hours of use fully charged, under ideal conditions. Start knocking off battery time if you use the internal modem without connecting to the AC adapter. The same goes for backlighting and synchronizing with your desktop PC. You'll also get a serial cable, manuals, and CD ROM disks with Windows CE Services and additional third-party software. Hardware options include a classy stand-up docking cradle with external battery charger (see Screen 1) and an extended-life rechargeable battery (12 hours).

Smart Cards a smart idea

Smart Cards are the size of a standard credit card. Like a PC Card or CF Card, Smart Cards can store personal information, data, and more. As mentioned, the Aero 8000 comes with a Smart Card slot (similar to a PC Card slot). The Aero will initially use Smart Card technology for security. To access a particular Aero 8000 a user would need a Smart Card with the appropriate security codes. The Aero 8000 also comes with 256k of "SPI Flash Memory" built in. This can be used to store user password and other data. Smart Cards can also store software applications, and Compaq believes that corporations will adopt the Aero 8000 as a (relatively) low-cost platform for accessing proprietary enterprise applications.

Strong suite of built-in and add-on software

The Aero 8000 is one of the new Handheld PC Professional Edition computers and includes the Windows CE 2.11operating system and the H/PC Pro class of "Pocket" applications and utilities built in. (See the IBM NotePad z50 review, page 12, for a description of these programs.) The unit I tested included the following additional applications, built into the Aero's ROM.

- Audible Player (Audible Inc. www.audible.com) – download and listen to audio books, magazines, news and more from the Web. Available for free for other H/PC, H/PC Pro or Ps/PC.
- CoolCalc (Applian Technologies, www.applian.com) adds basic, scientific, computer math, business and currency

conversion calculators to the Aero 8000. Available for H/PC, H/PC Pro, or Ps/PC).

- Citrix Mobile Thin Client (Citrix, www.citrix.com) – This lets the users access data and run full Windows 95/98/NT applications from the Aero 8000. The Citrix client software is available on other PC Companions.
- Fax Plus (CyberQuest Systems; www.cqsl.com) – cross between a fax and a drawing program lets you draw and fax handwritten notes, sketches, maps, diagrams and more (Screen 2). Available for other H/PCs.
- Compaq Utilities (Compaq, www.compaq.com) – a suite of six utilities that include the following: Asset Viewer (dis-system); BackLight (adjusts backlighting); Backup to/Restore from PC Card; Database Backups (set up automatic and periodic backups for databases); Launch Keys (customize quick launch keys); Travel Safe (a program that allows the user to change the country settings for their modem).

Screen 1: The Aero 8000's docking cradle lets you easily synchronize your H/PC and desktop PC data. The cradle includes an external battery charger.

The Reviewer's Guide Compaq sent me lists additional products and "software partnerships." It was unclear whether all of these will be made available on CD ROM. Included were the following:

Quick View Plus file viewer from Inso (www.inso.com); PowerPoint Editor from Westtek (www.westtek.com); Mail on the Run client software from River Run Software (www.riverrun.com); All In Sync remote synchronization software from River Run Software; Expense Force expense tracking software from Ruksun Software (www.ruksun.com); DCS terminal emulation software from FutureSoft (www.future soft.com); Siebel Sales Enterprise software from Siebel (www.siebel.com); Oracle Lite mobile client database from Oracle (www.oracle.com); Adaptive Server Anywhere mobile client database from Sybase, (www.sybase.com); Intertop CE Application Builder development tools from InterTop (www.intertop.com).

Not really a handheld

The Aero 8000 is called a "Handheld PC Pro," but like the IBM NotePad z50 reviewed on page 12, it's really a small notebook computer. You'll carry it around in a briefcase or shoulder bag, but you won't slip it into your pocket. Personally, I'd be careful walking around carrying either in my hands. They're smaller than most notebooks, but just a little too large and a little too easy to drop.

Like everyone else, Compaq is hoping

The Other H/PC Pros

Both IBM and Compaq are positioning their H/PC Pros as enterprise solutions. That is, they want businesses to view their H/PC Pro as the solution to their specific mobile computing needs (and buy a lot of them). They'll sell individual units, but they need big corporate sales for the product to be profitable. All of the H/PC Pro manufacturers are hoping for wide-scale corporate adoption. Here are the other corporate contenders in the mini-notebook-sized Windows CE category. All are H/PC Pros with large screens and keyboards, and all include built-in modems. All but the HP Jornada 820 have touchscreens instead of a touchpad-type pointing device.

Hewlett-Packard Jornada 820 — $999

The Jornada 820 uses a touchpad instead of a touchscreen, a VGA-out port for presentations, an optional high-capacity rechargeable battery for up to 15 hours of use, and comes with an excellent suite of add-on software. HP's reputation for quality will attract corporate attention.

NEC MobilePro 800 — $999

The MobilePro 800 has a USP port for external peripherals and a VGA-out port for presentations. It's Lithium-ion rechargeable battery is rated at 8 hours, but we have received e-mail suggesting it's much lower in real-world situations. Consider getting an extra battery pack for extended use. NEC makes a ½ VGA screen version of this.

Sharp Mobile Pro PV 5000 — $899

You can use the Sharp's Digital Camera Card with the PV 5000 to take digital photos, which you can attach to e-mail and send to associates. The rated battery life of 8 hours is optimistic if you use the camera card a lot.

Sharp Mobilon TriPad — $999

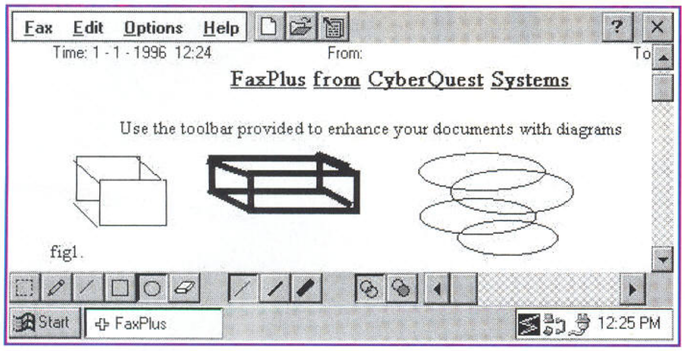
Co-winner of the 'Best Looking of the Bunch" award. The TriPad is identical to the Vadem Clio (see below). The rated battery life is 12 hours per charge, and it's a relatively accurate rating.

Vadem Clio — $999

The Clio and the Sharp TriPad are not only sleek and sexy, they have a unique "tri-mode hinge" which lets you use the unit as a pen-only tablet for note taking and data access, a presentation display for PowerPoint shows, and a standard laptop computer.

H/PC Pros have a number of similarities, including the same operating system and built-in "Pocket" applications from Microsoft. One of the ways manufacturers differentiate their product is by the add-on software they include with their product. IBM, Compaq and Hewlett-Packard have done the best job in assembling additional software for their H/PC Pros.

The success of these units, and the H/PC Pro as a platform, depends on corporate adoption. The competition will get stiffer as H/PC Pro manufacturers experiment to find the right combination of hardware and software features for their corporate clients. ■



Time: 1 - 1 - 1996 12:24 From: To

FaxPlus from CyberQuest Systems

Use the toolbar provided to enhance your documents with diagrams

fig1.

Screen 2: Fax Plus is a cross between a fax program and drawing program. It lets you draw and fax handwritten notes, sketches, maps, diagrams and more.

that enterprises will buy their H/PC Pro in big numbers. I think they have as good, and perhaps a better chance than anyone else does. This is a loaded machine with hardware features and add-on software enhancements that make it well suited to the corporate environment. Compaq has made the competition for corporate dollars a lot stiffer.

Although Compaq is aiming at corporate sales, the Aero 8000 will also be sold through commercial retail channels. The suggested retail price is $949. You can buy it online at MobilePlanet (www.mobileplanet.com). Additional locations are listed on the Compaq Web site (www.compaq.com/products/handhelds/). ■

Spec Sheet Compaq Aero 8000 — $949

Contact: www.compaq.com/products/handhelds/

HARDWARE	
CPU	128 MHz SH4, 64-bit
Display	800x600 (10" diagonal) 256 color backlit
Memory (in MB)	16 SDRAM (exp 64) / 16MB ROM (upg)
Communications	56 Kbps modem
External ports	Serial; fast IrDA; headphone jack; modem port, VGA out, PS/2 mouse/keyboard port
Card slots	PC Card (Type II), 1 CF slot (Type I), 1 CF slot (Type II), Smart Card reader slot
Power	Lithium Ion (up to 7 hr); AC adapter
Dimensions	11x8.6x1 in.; 2.9 lb.
Other features	SPI Flash memory stores password and asset data. TrackPad pointing device (no touchscreen)
Accessories, standard	AC adapter; docking cradle; serial cable; manuals; Windows CE Services; additional software.
Options	Docking Cradle with external battery charger; Extended life rechargeable battery (12 hr).
SOFTWARE	
Operating System	Windows CE 2.11
Built-in MS apps.	H/PC Professional Edition set
Built-in Mfg & 3rd party apps.	3rd Party: Citrix, Audible Player, CoolCalc, Fax Plus, Network Explorer. OEM: Compaq Utilities.
User-installable apps (CD ROM)	Information not yet available.
Comments:	No touchscreen, reasonable battery life

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Dual I/O Cards
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Bar Code Wand Cards
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Bar Code Laser Scanner Cards
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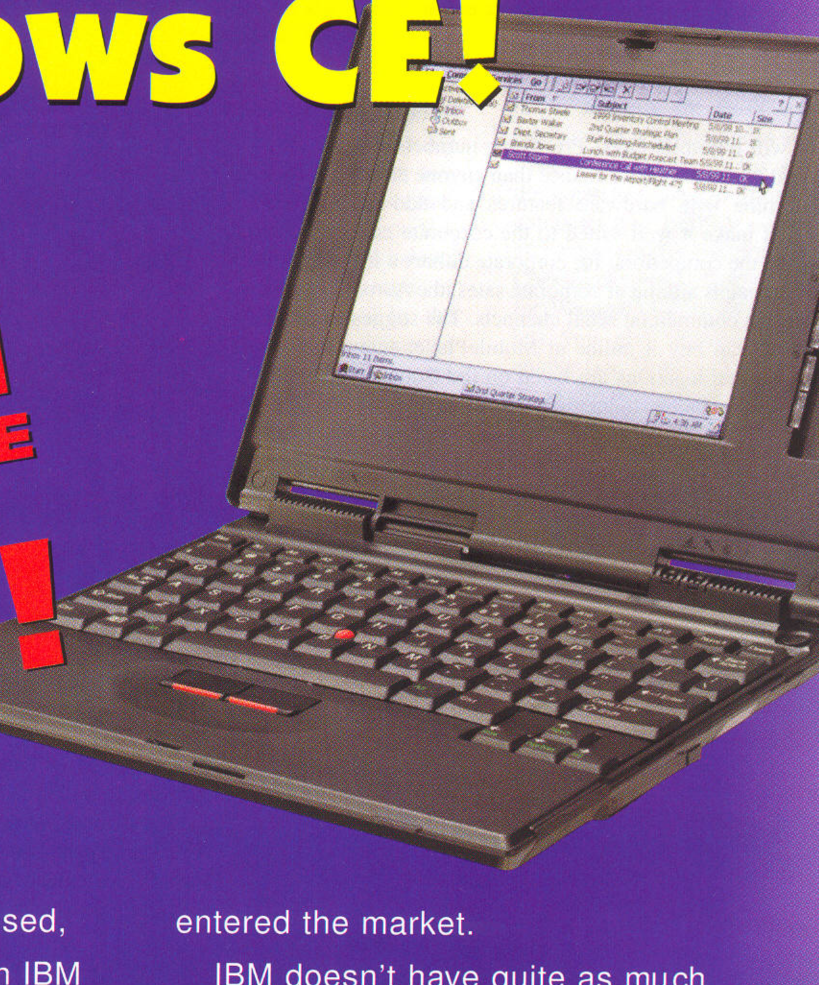


BY RICH HALL

The first computer I ever used, over 15 years ago, was an IBM XT. I think it was a "turbo" model with a "fast" 8 MHz processor, 640 kb of RAM and two 5.25-inch floppy disk drives. Apple and others had beaten IBM to the punch, but many in the business world didn't take desktop computers seriously until IBM entered the market.

IBM doesn't have quite as much clout now, but business users still pay attention to what Big Blue backs. And many will feel a little bit more comfortable with Windows CE knowing that IBM has finally come out with a PC Companion — its new WorkPad z50 Handheld PC Pro.

A lightweight mini-notebook

The IBM WorkPad z50 is about the size and weight of a small notebook computer (see "Spec Sheet" sidebar). The 2.6 pound H/PC Pro is powered by a snappy 131 MHz processor and comes with 16 MB of RAM, expandable to a 48 MB. Its 640 x 480 color display is very readable, due in part to the fact that it is not a touchscreen display. (Touchscreens have a thin embedded sensor layer to "feel" taps on the screen, and this reduces the readability of the screen a little.)

TrackPoint instead of touchscreen

Instead of the touchscreen, the z50 uses a mouse device called a "TrackPoint," a red circle about the size of a pencil eraser located between the 'G', 'H' and 'B' keys. You put your finger on the TrackPoint and push in the direction you want the screen pointer to move. Left and right mouse buttons are located below the spacebar. This type of mouse pointer is also found on IBM's ThinkPad notebook computers. I'm used to, and prefer, a touchscreen. You do have to take your hands off the keyboard to tap the screen, but I have a hard time moving the arrow cursor to the right place with the TrackPoint. The bottom line for me? Using the TrackPoint takes more time. Could I get used to it? Yes. Is their any advantage to using it? You get a slightly more readable display and it may decrease power consumption a little.

(TIP: Game players note: many of the arcade-type games written for Windows CE assume that you will be tapping on the screen a lot. You can use the TrackPoint to move around in one of these games, but it's too slow and makes the games almost unplayable on the z50.)

The WorkPad z50 has one of the nicest keyboards I've seen on an H/PC. I can type on it as fast as I can on my desktop's keyboard. Actually, I can type faster because the key spacing is closer than my desktop keyboard and I don't have to reach as far. The z50 has 12 programmable quick launch keys, an embedded keypad, and separate Arrow Keys. With the exception of the Tab and ~, the keys are in standard positions.

PC and CF Card slots

The WorkPad z50 is unique among PC Companions in that it comes with a Type III PC Card slot. This lets you accept two Type II PC Cards, or one Type III card. The z50 also has one CompactFlash slot. This will accept standard Type II CF cards and IBM's new CF+ Type II Microdrive, a miniature hard drive the size of a CompactFlash card (www.ibm.com/storage/microdrive). Microdrives are available in 170 and 340MB capacities and should work with any PC Companion equipped with a Type II CF+ slot.

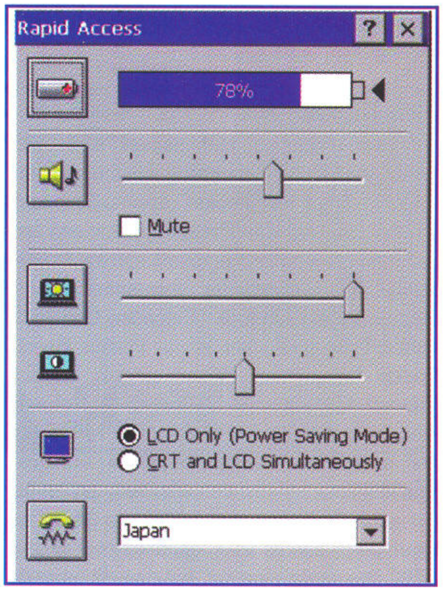
The z50 also comes with a built-in 33.6 Kbps modem, a fast IrDA interface, built-in microphone and speaker for voice recordings, a stereo headphone jack for playback, a VGA-out port, a USB port and a serial port. The WorkPad z50 is powered by a Lithium-Ion battery that gives users 8 hours of use per charge. An optional extended capacity battery gives up to 16 hours per charge. The IBM WorkPad z50 comes with AC Adapter, phone cable, CD ROMs with Windows CE Services and IBM add-on software. Options include a high-capacity 16-hr Lithium-Ion battery, a 32 MB RAM memory upgrade, a

Spec Sheet

IBM WorkPad z50 H/PC Pro — $999

Contact:	www.pc.ibm.com/us/workpad/
Hardware	
CPU	131 MHz NEC MIPS
Display	640x480 (8.2" diagonal) 65K color backlit
Memory (in MB)	16 RAM (exp 48) / 20 ROM (upg)
Communications	33.6 Kbps modem
External ports	Serial; USB; fast IrDA; headphone jack; RJ-11 modem port.
Card slots (Type II)	CF Card; PC Card (accepts Type III also)
Power	Lithium-Ion (8 hr per charge); AC adapter
Dimensions	8.0x10.2x1.0 in.; 2.6 lb.
Other features	Touchpad instead of touchscreen; built-in microphone and speaker; manual record button.
Accessories, standard	AC adapter; docking cradle; serial cable; manuals; Windows CE Services; additional software.
Options	16 hr battery, stereo headphones
Software	
Operating System	Windows CE 2.11
Built-in MS apps.	H/PC Professional Edition set
Built-in Mfg & 3rd party apps.	3rd Party: bUSEFUL Backup; bFAX Pro; bPRINT. IBM: Rapid Access; Battery Calibration; Diagnostic Utility.
User-installable apps. (on CD)	IBM: User Guide; Global Network Dialer; Mobile Connect Client.

COMMENTS: Touchpad instead of touchscreen; accepts Type III PC Cards; good communications setup utility.



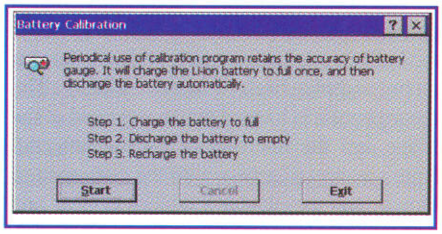
78%

☐ Mute

● LCD Only (Power Saving Mode)
○ CRT and LCD Simultaneously

Japan

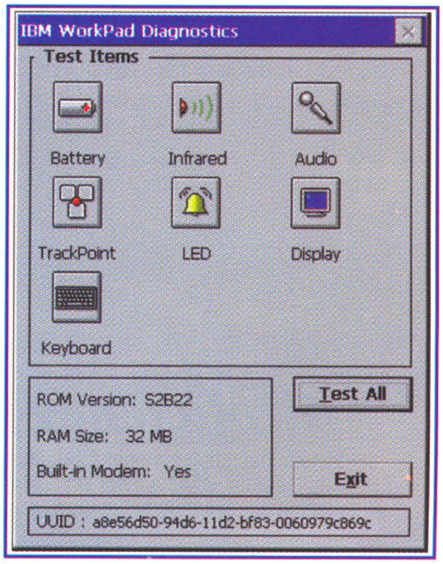
Screen 1: IBM's Rapid Access lets you monitor the battery charge level, adjust the brightness and contrast of the display, change the volume level and audio properties, and change the country mode setting for your built-in modem.



Periodical use of calibration program retains the accuracy of battery gauge. It will charge the Li-Ion battery to full once, and then discharge the battery automatically.

Step 1. Charge the battery to full
Step 2. Discharge the battery to empty
Step 3. Recharge the battery

Screen 2: IBM's Battery Calibration utility tests the battery to ensure that it charges to its full capacity.



ROM Version: S2B22
RAM Size: 32 MB
Built-in Modem: Yes
UUID : a8e56d50-94d6-11d2-bf83-0060979c869c

Screen 3: IBM's Diagnostic Utility lets you test the Battery, Infrared port, Audio, TrackPoint, Notification LED, Display and Keyboard.

serial-to-parallel printer cable, and the IBM 340 MB microdrive.

A Handheld PC Pro

The WorkPad z50 comes with the Windows CE 2.11 operating system and the H/PC Pro class of "Pocket" applications and utilities built in. The Pocket applications are versions of popular Microsoft software optimized for the smaller computers. They include Pocket Outlook (Calendar, Contacts, Tasks, InBox), Pocket Word, Pocket Excel, Pocket Powerpoint, Pocket Access, Pocket Internet Explorer and Windows Explorer. Also built into the H/PC Pro from Microsoft are setup and communications utilities, World Clock, a simple calculator program, the game Solitaire, and InkWriter. This last application comes as a standard part of the H/PC Pro application set, but doesn't quite fit on the z50. InkWriter lets users enter handwritten notes, or draw maps and sketches on their H/PC. The z50's lack of a touchscreen means that you have to draw with the touchpad arrangement, which is very difficult.

The final application supplied by Microsoft is the Voice Recorder, which works with the built-in microphone and speaker to let you record and play back short voice memos. The record button is located on the right end of the hinge and the microphone on the left end. Both are easy to access with the case open or closed, and the playback quality is clear and understandable, even in noisy environments.

Built-in software from IBM and other vendors

Included with the z50 are a number a useful applications and utilities from IBM and independent software vendors.

- **bUSEFUL Backup Plus** (bSQUARE: www.bsquare.com) – lets you backup and restore all or part of your WorkPad z50's data. (For more information on this, bFAX Pro, bPRINT and other bSQUARE programs see Ed Zabrek's review, page 22 of the Mar/Apr 1999 issue of *Handheld PC Magazine*.)
- **bFAX Pro** – lets you send, receive, and manage faxes with your z50. Includes bVIEW, which lets you preview your faxes before you send them.
- **bPRINT** – adds print functionality to H/PCs.
- **IBM Rapid Access** (IBM: www.pc.ibm.com/us/workpad/) – a utility that allows you to monitor the battery charge level, adjust the brightness and contrast of the display, change the volume level and audio properties, and change the country mode setting for your built-in modem (Screen 1).
- **IBM Battery Calibration utility** – tests the battery to ensure that it charges to its full capacity. To keep the accuracy of the battery gauge, IBM recommends that you use the Battery Calibration application periodically (Screen 2).
- **IBM Diagnostic Utility** – The WorkPad z50 comes with a Diagnostic Utility, which lets you test the Battery; Infrared port; Audio; TrackPoint; Notification LED; Display and Keyboard (Screen 3).

Add-on software (installable from CD ROM)

The WorkPad z50 comes with an HTML-based user guide on CD ROM. It's designed to open up in your desktop PC's Web browser, but you could copy sections of it to the z50 and use Pocket Internet Explorer to view it. This might come in handy if you had a specific section of the user guide you wanted with you all the time.

The same CD ROM has the following additional applications you can install on the WorkPad z50.

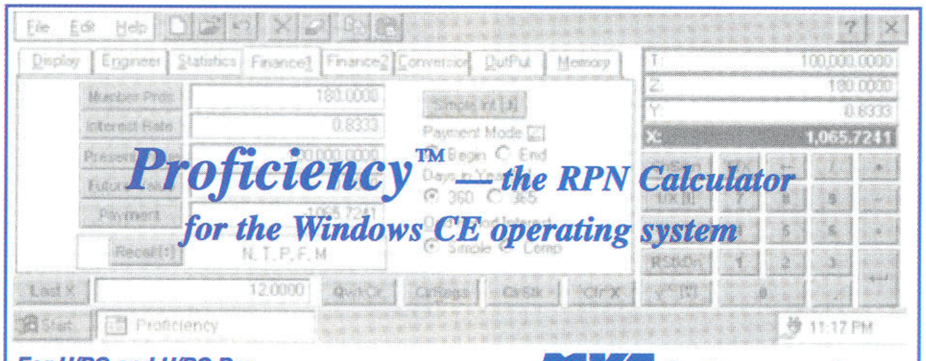
- **IBM Global Network Dialer** (for H/PC and PC) – a dialer program that lets you make network connections to the IBM Global Network and access its features, using Point-to-Point Protocol (PPP). Also lets users of TCP/IP communications (Secure IP option) access authorized intranet resources, as well as access both the Internet (without using a firewall or proxy server) and authorized intranet resources on a single connection for users of TCP/IP communications (Dual Access option).
- **IBM Mobile Connect Client** – enables organizations to deliver line of business applications to PC Companion devices, allowing easy access to up-to-date detailed information and allowing data to be validated at the point of creation. IBM Mobile Connect provides direct server access to Lotus Domino and Microsoft Exchange servers from the WorkPad z50. Instead of synchronizing with individual PCs, you can use your WorkPad z50 to replicate information to a centralized, managed server running Lotus Notes Domino or Microsoft Exchange (An IBM Mobile Connect server is necessary for full operation).

If you like Big Blue...

When PC Companions first came out nobody knew what to make of them. They looked like notebook computers that got hit with a shrink ray. The keyboard was too small to use easily, but the H/PC was just a little too big and bulky to easily fit in your pocket. Windows CE got smaller with the Palm-size PCs, and bigger with most of the H/PC Pros.

The WorkPad z50 is a nice looking, lightweight mini-notebook-size PC Companion manufactured by one of the industry's leaders. It has decent battery life, an excellent set of add-on utilities and communications applications, and is reasonably priced at $1,000. If you want a no-hassle notebook-like computer that takes care of all the basics, and you don't need touchscreen capabilities, the IBM WorkPad z50 is one of the better alternatives. On a personal note, I had a difficult time with the TrackPoint mouse devices. Since the WorkPad z50 comes with a USB port, I would use a regular mouse with a USB interface for extended periods of work.

Although IBM will focus on corporate sales, the WorkPad z50 is available to individual users. A list of online resellers in the U.S. can be found on IBM's Web site. Go to www.pc.ibm.com/us/workpad/howtobuy.html, click on WorkPad z50 and then the "Buy Online" button. In the U.S. you can also call CompUSA Net at 800-730-5198 or CompuCom at 888-221-0890. ■



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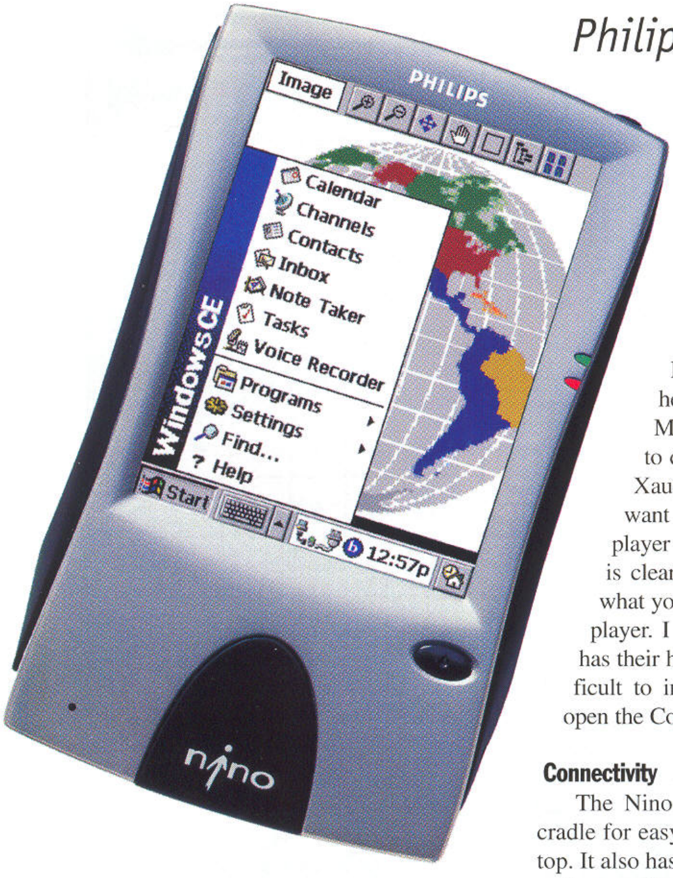
Styling, Software, and a Color Screen

Philips Nino 510



BY CHRIS DE HERRERA

Philips has succeeded in taking their stylish Nino series of Palm-size PCs to new heights with the color screen Nino 510. If you liked the Nino 200 and 300 series you'll love the 510. The new chrome and black Nino is identical in styling to the 200/300 series. The most striking difference is a bright 4" diagonal DSTN 256 color LCD display. Screen contrast is controlled with a software utility instead of the small wheel used on previous Ninos. This eliminates the accidental changes in contrast that could happen with the 200 and 300 series. Also, the Nino 510's improved screen eliminates the "e.k.g. effect" seen on previous Ninos, when drawing straight lines in Jot or NoteTaker.

Mono headphone jack, music & audio books

In addition to the color LCD, Philips has added a mono headphone jack for Audible and MP3 music playing. You'll need to download an MP3 player from Xaudio (www.xaudio.com) if you want to play MP3s. An Audible player is built into the 510. The audio is clear and the volume is similar to what you would find on a portable CD player. I did notice that when the user has their headphones plugged in, it's difficult to insert or remove the stylus or open the CompactFlash slot.

Connectivity

The Nino 510 ships with the docking cradle for easy synchronization to the desktop. It also has an IrDA port at the top of the unit as well as a CompactFlash slot for Ethernet or modem access. Further, the Nino 510 can use the same clip-on modem as the Nino 300, for easy access to e-mail without using the CompactFlash slot.

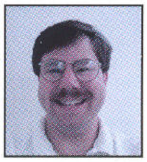
Finger Real Estate

The button layout on the 510 is identical to the Nino 300 series. Philips stayed with separate action, up and down buttons instead of a single jog wheel that some consumers prefer. These buttons and the exit button are located on the left side of the 510. On the right side you'll find the 4 application launch buttons. The power on button for the Nino 510 is on the top of the unit. Like other Ninos the 510 is more suited to a right-handed writer, holding the unit in their left hand and using their thumb for the action/up/-down buttons. A left-handed user will have to get used to using their fingertips to perform these functions.

Under the Hood

Philips has continued with the same level of performance by using the 75 MHz Toshiba MIPS CPU for the Nino 510. The unit comes with 16 MB of RAM – enough for most users. I recommend changing the memory allocation to 4 MB for Program Memory (for running programs) and 12 MB for file storage. This is done from the Control Panel - System - Memory. Also, the Nino 510 continues the use of the NiMH rechargeable battery pack or 2 AA alkaline batteries that the 300 did. Philips estimates that you'll get 8 hours of use on a fully-charged NiMH battery pack. A Lithium-Ion battery pack would have given better battery life, but it would have been a little more expensive and it probably would have meant not being able to use AAs. It's handy being able to use regular AAs in a pinch, but they'll only give you about 2-3 hours of use. As usual, your battery life will vary.

The Nino 510 ships with the NiMH



Chris (TechEd@CEWindows.net) is a special correspondent and contributing author for Handheld PC Magazine. *He maintains one of the best Windows CE Websites (www.cewindows.net/). Chris is a Microsoft Comm Link columnist covering communications and Windows CE issues on Microsoft's Windows CE Web site. Chris is a Microsoft Most Valuable Professional for Windows CE and writes articles on Windows CE for his own Website and for other mobile computing publications. Chris regularly participates in chats on the Microsoft Network and various newsgroups (including Microsoft.public.windowsce).*

Spec Sheet

Philips Nino 510 — $449

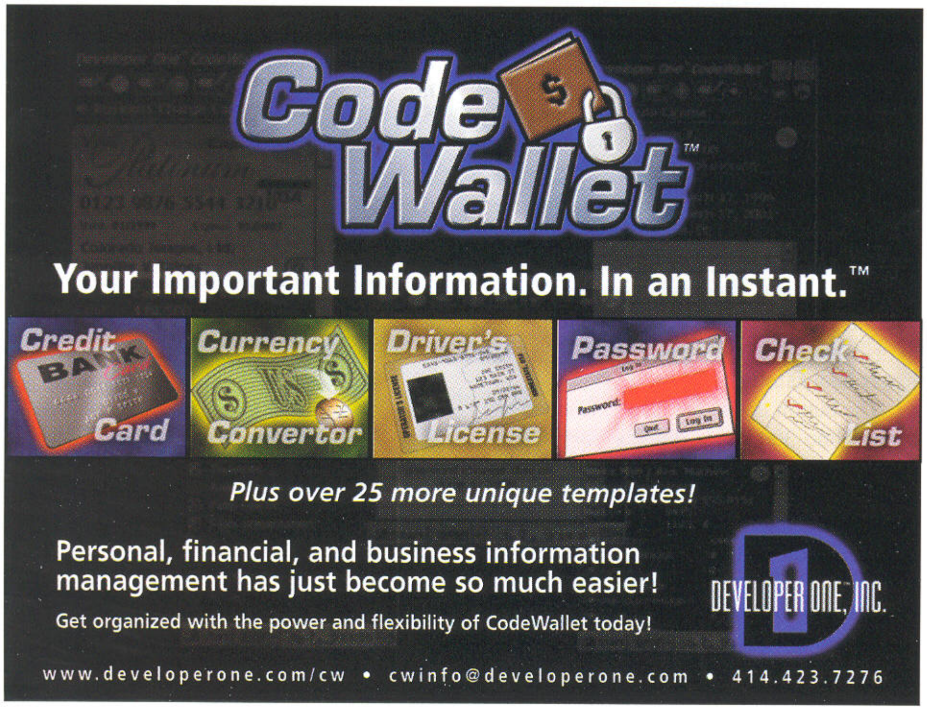
Contact:	http://nino.philips.com/
Hardware	
CPU	75 MHz Toshiba MIPS
Display	320x240, 256 color backlit touchscreen
Memory (in MB)	16 RAM / 16 ROM (upgradeable)
Communications	IrDA infrared port (115Kbps), optional modem, Docking Cradle
External ports	RS-232 Serial port; mono headphone jack
Card slots (Type II)	CF Card
Power	NiMH (8 hr per charge), accepts AAs, AC adapter
Dimensions	3.41 x 5.25 x 0.75 in., 8 oz.
Other features	Microphone, speaker, voice record button
Accessories, standard	AC adapter, Docking Cradle, Sync. Cable, Manuals, Windows CE Services, Additional Software.
Options	Clip-in 19.2 Kbps modem, CF Cards, Nino Dock, Sync Cable, International AC Adapter, Extra NiMH Battery Pack, Traveling Case, Replacement Stylus Pack, Car Charger.
Software	
Operating System	Windows CE 2.11
Built-in MS apps.	Palm-size PC standard apps
Built-in Mfg & 3rd party apps.	3rd Party: AudiblePlayer, AvantGo, bTASK, bFAX Express, bPRINT, CalliGrapher, CoolCalc, MobileSoft Expense Manager, Tegic T9; OEM: Nino Voice, Nino Image
User-installable apps. (CD ROM)	Windows CE Services 2.2
Comments:	Sleek, stylish color-screen Ps/PC with an excellent set of add-on software.

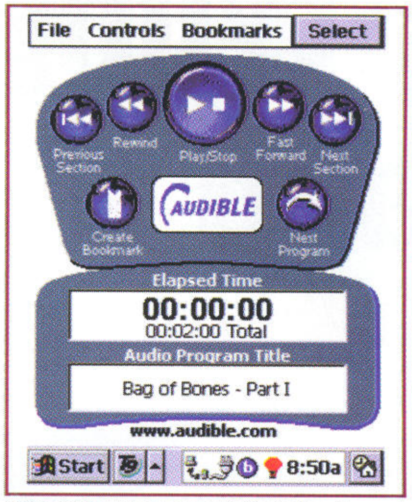
rechargeable battery pack, AC adapter, and docking cradle. Philips also offers their clip-on modem for the Nino 510. For those of you who have already invested in Nino peripherals, the accessories are the same for the Nino 300 and 510.

Palm-size PC applications

Microsoft includes the following standard applications on every Palm-size PC. These applications are built into ROM and do not have to be installed by the user.

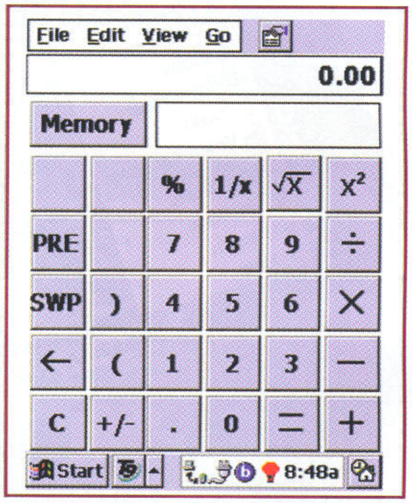
- Pocket Outlook – which includes Calendar, Contacts, Tasks and Inbox.
- NoteTaker – for quick handwritten notes or sketches.
- Voice Recorder – to record and playback short voice memos.
- Mobile Channels – to view Web content offline.
- Solitaire – the popular card game.
- World Clock – lets you set the date and time for your Home and Visiting city.


Code Wallet™
Your Important Information. In an Instant.™
Credit Card · Currency Convertor · Driver's License · Password · Check List
Plus over 25 more unique templates!
Personal, financial, and business information management has just become so much easier!
Get organized with the power and flexibility of CodeWallet today!
DEVELOPER ONE, INC.
www.developerone.com/cw • cwinfo@developerone.com • 414.423.7276

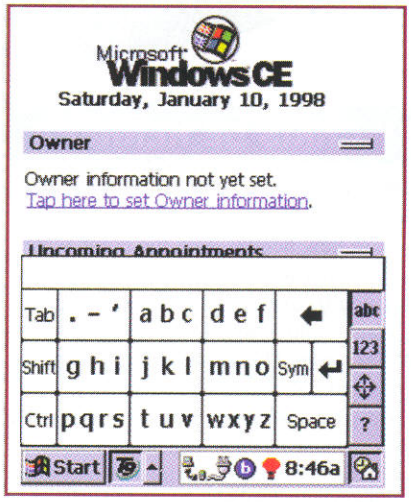


Elapsed Time
00:00:00
00:02:00 Total
Audio Program Title
Bag of Bones - Part I
www.audible.com

Screen 1: The Audible player built into the Nino lets you download audio books, magazines, news and more from audible.com and view them on your Nino 510.



Screen 2: – CoolCalc adds seven different calculators to the Nino, plus the ability to create customize calculators of your own.


Microsoft Windows CE
Saturday, January 10, 1998
Owner
Owner information not yet set.
Tap here to set Owner information.
Upcoming Appointments

Screen 3: The T-9's large, nine-key input pad takes up the lower half of the Nino's screen. Each key represents three or four characters. Tap in the word and T9 lists the different possible words above the keypad. Tap on the desired word and it's entered.

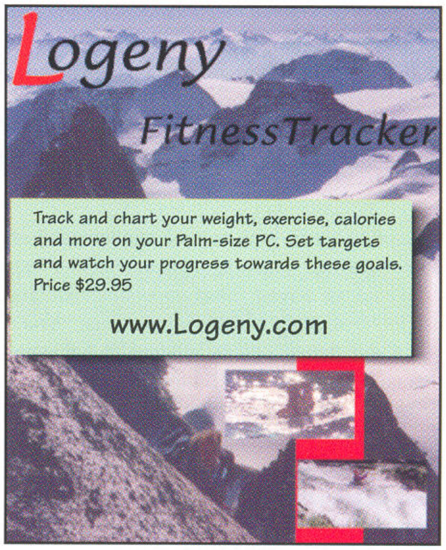
- Utilities – various setup and configuration utilities.

Great add-on applications

Philips has assembled a nice set of additional software applications for the Nino 510. Built into the Nino's ROM are the following applications:

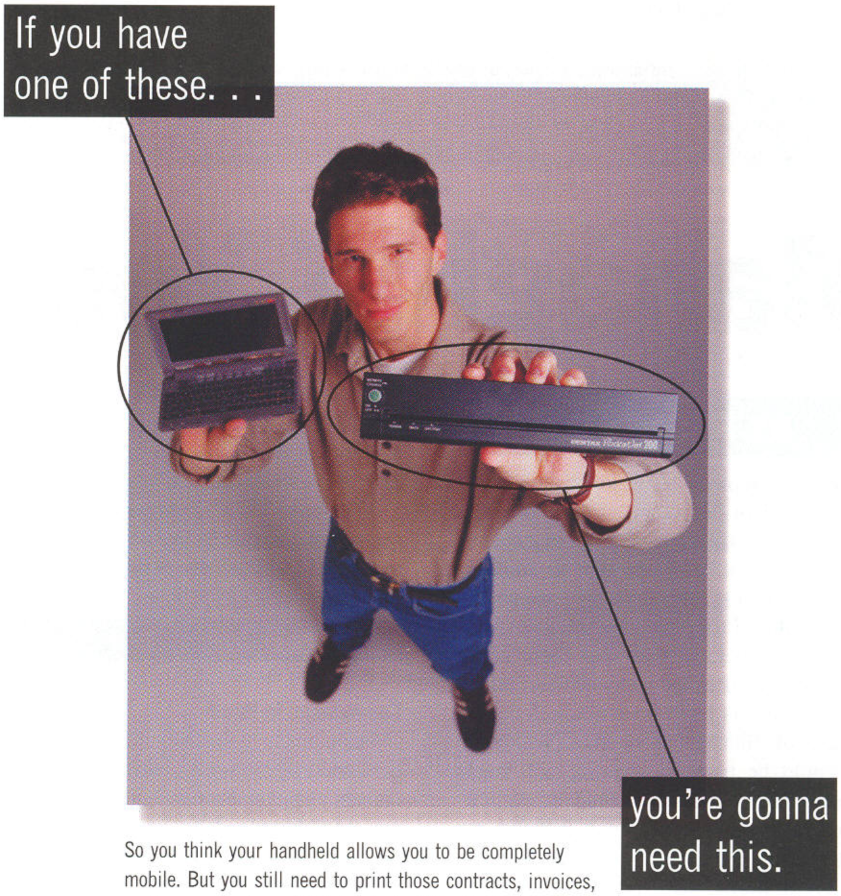
- Audible player (www.audible.com) — lets you download audio books, magazines, news and more, and take them with you on your Nino or any Palm-size PC (Screen 1). Programs are selected and purchased online from the 17,000 hours available.
- AvantGo.Com (www.avantgo.com) – a free Internet service that lets you download Web content, from over 100 popular channels, optimized for display on your Nino or other PC Companion.
- bFAX Express (www.bsquare.com) – lets you fax text (.txt), rich text format (.rtf) and bitmap (.2pb) files from the Nino or other Palm-size PC equipped with a modem.
- bVIEW (www.bsquare.com) – lets you view faxes before sending them.
- bTASK (www.bsquare.com) – lets you navigate and close Nino applications quickly and easily.
- CalliGrapher 5.2 (www.paragraph.com) – a popular handwriting recognition program that adds handwriting recognition for all styles - cursive, print or mixed. No training required. Screen drawing, note-taking, spell checking supported. Versions available for Palm-size PCs, Handheld PCs, and Handheld PC Pros.
- CoolCalc (www.applian.com) – adds seven different calculators to the Nino, plus the ability to customize calculators and create your own (see Screen 2 and review on page 24). Versions available for all Palm-size PCs, H/PCs, and H/PC Pros.
- Expense Manager (no Web reference) – lets you track your business expenses on your Nino.
- Nino Image (no Web reference) – a digital image viewer from Philips. Displays bitmap and JPG formats.
- Nino Voice (no Web reference) – adds voice recognition and command capability to the Nino.
- T-9 Keyboard (www.tegic.com) – adds the T9 input system to the Nino. T9 is a large, nine-key input pad that takes up the lower half of the Nino's screen (see Screen 3). Each key represents three or four characters. Tap in the word and T9 lists the different possible words at the top of its keypad. Tap on the desired word and it's entered.

Clearly Philips has improved on a good design with the Nino 510. But the big plus with the 510 is the additional bundled software, which really makes the unit useful right out of the box. I wish Philips had recognized the interest in stereo music and had included a stereo headphone jack instead of a mono. It would have made the Nino much more appealing, especially when compared to the Casio E-100. The Philips Nino 510 comes with a one-year limited warranty and is priced at $449 at the Philips online Nino Store (nino.philips.com/store/index.html). ■


Logeny
FitnessTracker

Track and chart your weight, exercise, calories and more on your Palm-size PC. Set targets and watch your progress towards these goals. Price $29.95

www.Logeny.com



So you think your handheld allows you to be completely mobile. But you still need to print those contracts, invoices, quotes, or directions. With the Pentax® **PocketJet® 200** you can print directly from your handheld PC and add only one pound to your load! This full-page printer produces crisp text and graphics at speeds up to three pages per minute. And for complete wireless printing, an infrared option is available.

You need a printer-
make it PocketJet 200.

PENTAX®
TECHNOLOGIES

PocketJet 200
The Ultimate Mobile Printer for Handheld PCs
For information on purchasing this product, please go to www.mobileplanet.com
Resellers interested in finding out more information can contact mobility@pinacor.com

SPECIAL SECTION:

Managing Money and Crunching Numbers on Your PC Companion

I used to teach high school mathematics and one of the questions I always got from my students at the beginning of the year was: "Why do we have to study this stuff, Mr. Hall? We're never going to use it!" The reply I always gave was: "You want to bet on that?"

A day doesn't go by where I'm not involved with numbers – and I'm an editor/writer! I'll have to calculate page counts, figure advertising percentages, convert from metric to standard American units of length and weight, and review products the deal with numbers, and more. I also use calculators and financial programs for personal reasons. In fact, most individuals deal with numeric data on a day-to-day basis, in their personal and professional lives. It's no accident that the people designing handhelds, palmtops, PDAs and the like, always put a calculator on their devices.

Microsoft chose to meet the most basic of our number crunching needs by including a simple digital calculator with all PC Companions. In addition, H/PCs come with Pocket Excel, a spreadsheet program that organizes and speeds up number crunching. For those of you needing a little more, independent software developers have come up with a variety of excellent software for general, business, financial, and scientific needs.

The articles in this section take a look at numbers from different perspectives. First I look at "Managing Your Money," software that deals with financial issues such as currency conversions, financial tracking, investment management and expense/time tracking. Following this is an article on the different calculator programs available. Then, John Kennedy takes a look at the built-in Pocket Excel program and talking about some third-party spreadsheet programs for Palm-size PC users.

The first two articles list over 40 programs – more than I could actually download and test. I've limited my comments to the ones I actually used, but left the others in for reference. You can download free demos of most of the programs listed. Finally, I've placed a ★ by my favorite programs.

Managing Your Money

BY RICH HALL

There are more things to do with numbers than just crunch them. You can organize them, track them as expenses, convert them from one unit to another, and invest them. I've attempted to divide these "Money Programs" up into a logical order, shown below. Note that there are a number of excellent list programs and information managers that I have not included in this list of financial programs. Although they could be used to organize and track financial data, I decided to limit this article to programs that were more focused on financial data. The categories are as follows:

Conversion – these programs are used to convert between different currencies. They may also be able to convert between weight, length, etc., but they must be able to do currency conversions.

Financial Trackers – programs that help you track your personal finances (checkbooks, credit card accounts, bills, investments, etc.) These programs may also help you track business expenses, but that is only an additional function of these programs.

Investment – programs that help you access investment information and make investment decisions. The program may do other things, but that is it's primary function.

Expense/Time Trackers – these programs are dedicate to capturing and organizing travel and business expenses.

Conversion

Conversions In Hand

Can make over 200 different types of conversions, including currencies. Because currency conversions go out of date quickly, you can download an updated conversion file from the developer's company Web site. You can customize the conversion tab layout to place your frequently used conversion types into the most easily accessible location. Also includes a built-in calculator.

Conversions In Hand is priced at $20 and is available for H/PCs and Ps/PCs. Demo is available at the developer's Web site. Contact: Burr Oak Software; E-mail: info@burroak.on.ca; Web: www.burroak.on.ca

Dyna Metric

A metric conversion tool that lets engineers convert many units from a variety of sources. A setup utility helps configure units for convention of the selected source. The user can select the different sources.

Dyna Metric is freeware and is available for H/PCs and Ps/PCs. Download it at www.palmix.itil.com.

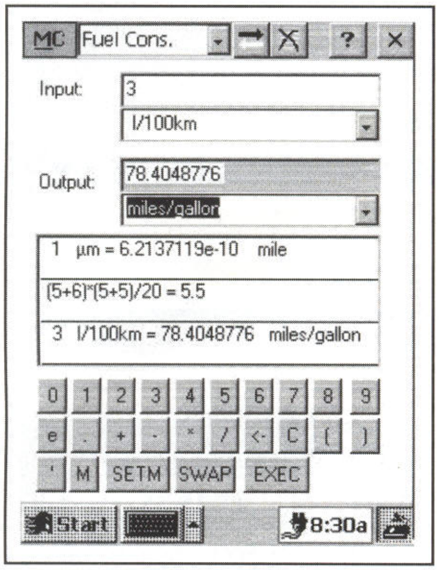
Euro Calculator

A simple calculator that also has the additional facility of showing the currency conversions between the common European currency EURO and the other eleven participating countries.

Euro Calculator is freeware and is available for the H/PC. Download it at www.itil.com/.

★ METAconverter 1.0

Conversion program for over 110 different units, including currency, length, area, volume, mass, temperature, power, energy, speed, frequency, pressure, force, dB-Uout/Uin, and time. Euro conversion is fully supported and contains fixed exchange rates. Exchange rates can also be changed and are stored in an internal database. Converting results can be exported with copy and paste to other programs (Screen 1).

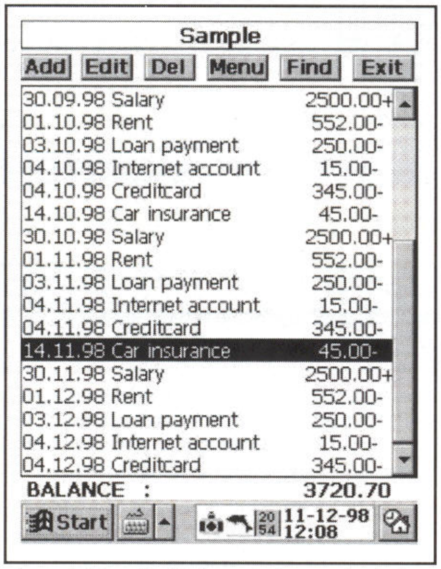


Input: 3
l/100km

Output: 78.4048776
miles/gallon

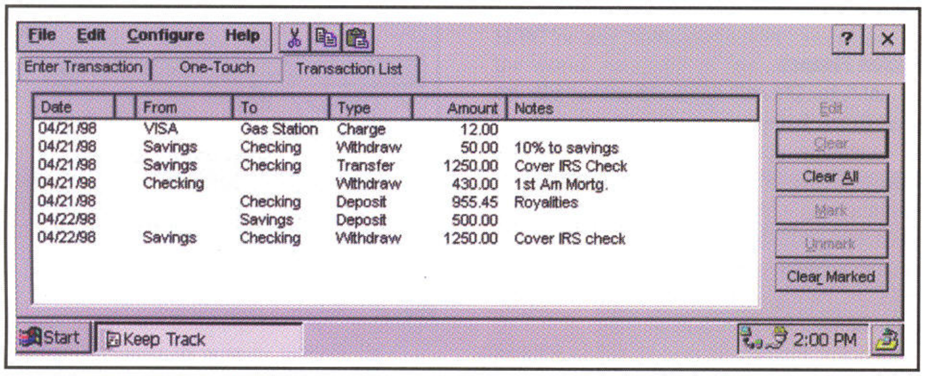
1 µm = 6.2137119e-10 mile
(5+6)*(5+5)/20 = 5.5
3 l/100km = 78.4048776 miles/gallon

Screen 1: METAconverter is a conversion program for over 110 different units, including currency, length, area, volume, mass, temperature, power, energy, speed, frequency, pressure, force, dB-Uout/Uin, and time.



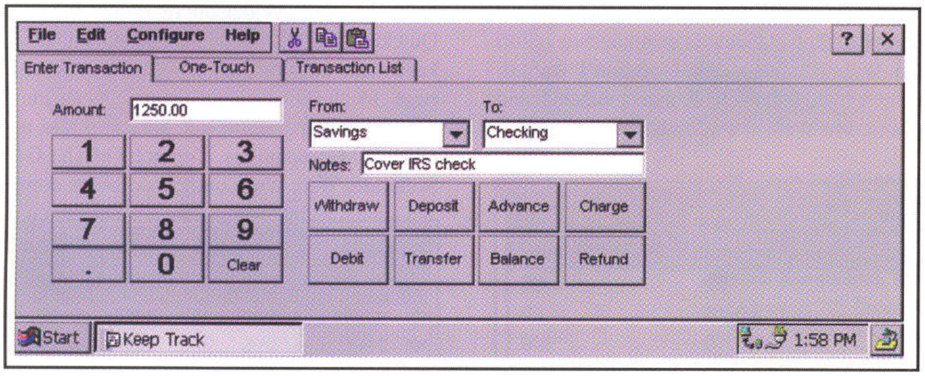
30.09.98 Salary	2500.00+
01.10.98 Rent	552.00-
03.10.98 Loan payment	250.00-
04.10.98 Internet account	15.00-
04.10.98 Creditcard	345.00-
14.10.98 Car insurance	45.00-
30.10.98 Salary	2500.00+
01.11.98 Rent	552.00-
03.11.98 Loan payment	250.00-
04.11.98 Internet account	15.00-
04.11.98 Creditcard	345.00-
14.11.98 Car insurance	45.00-
30.11.98 Salary	2500.00+
01.12.98 Rent	552.00-
03.12.98 Loan payment	250.00-
04.12.98 Internet account	15.00-
04.12.98 Creditcard	345.00-
BALANCE :	3720.70

Screen 2: BalanceBook helps you track personal or business account expenditures. It calculates the account balance and allows you to enter future repeating entries.



Date	From	To	Type	Amount	Notes
04/21/98	VISA	Gas Station	Charge	12.00	
04/21/98	Savings	Checking	Withdraw	50.00	10% to savings
04/21/98	Savings	Checking	Transfer	1250.00	Cover IRS Check
04/21/98	Checking		Withdraw	430.00	1st Am Mortg.
04/21/98		Checking	Deposit	955.45	Royalities
04/22/98		Savings	Deposit	500.00	
04/22/98	Savings	Checking	Withdraw	1250.00	Cover IRS check

Screen 3: KeepTrack helps track Credit, Debit and ATM card transactions.



Amount: 1250.00

From: Savings

To: Checking

Notes: Cover IRS check

Screen 4: KeepTrack's "Enter Transaction" screen includes a number pad to enter the amount, and buttons for the most common types of transactions.

METAconverter is freeware and is available for H/PCs. Download is at www.cemonster.com or the developer's Web site. Contact: META TOOLS GmbH; Web: www.metatools.de/ (German language site)

Pocket Convert

Pocket Convert for Windows CE converts between currencies, language phrases, abbreviations, or user-defined information and other data.

Price: œ15 ($24) Download from company Web site listed below; Contact: Surerange Analysis Ltd; Fax: 44 (0) 1483 304960; E-mail: info@surerange.com; or from MobileSoft at www.mobilesoft.com; Web: www.surerange.com/wince.

SwEuro 1.3

A simple European currency conversion utility. SwEuro is freeware and is available for H/PCs. Download it at www.sw4you.de/.

Financial Trackers

Cashman

Tracks all financial transactions including checking, ATM, savings, credit cards, and investments. Includes Budgets and Reports features. Note: Some handhelds need the MFC file to run this application.

Cashman is shareware (registration fee: $39.95) and is available for H/PCs. A free demo is available at the developer's Web site. Contact: Handheld Data Systems; E-mail: support@handhelddata.com; Web: www.handhelddata.com/productinfo.htm

BalanceBook 2.4

Keeps track of your personal or business account expenditures (Screen 2). BalanceBook calculates the account balance and allows you to enter future repeating entries - with a specified interval in months - which are updated automatically on the appropriate date. You can export files to a *.TXT format, these files can consequently be imported into Microsoft Excel for printing or further processing.

BalanceBook is priced at $11.95 and is available for the Ps/PC. A free demo is available at the developer's Web site. Contact: Portable Projects; E-mail: info@portableprojects.com; Web: www.portableprojects.com.

DMoney

Customizable financial tracker for your Ps/PC. DMoney is freeware and is available for the Ps/PC. It can be downloaded at www.cemonster.com.

Dollars and CEnts

A personal finances manager for Windows CE 2.0 that supports multiple accounts, transfers, repeating transactions, running totals, and minimum and maximum balance displays. Other features include automatic tip entry for restaurants, online help, export to CSV, TXT, QIF, and TSV files, resizable and movable columns. Dollars and CEnts is freeware (Beta demo) and is available for H/PCs. It can be downloaded at www.laurenson.com/stingersoft/

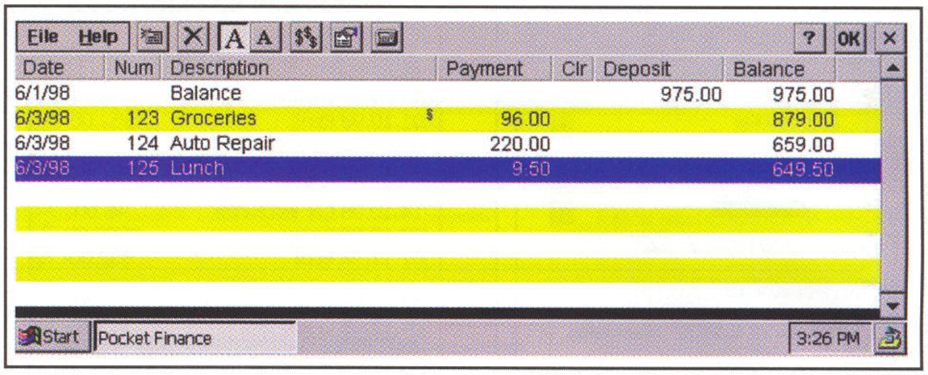
★ KeepTrack

Helps you track your Credit, Debit and ATM card transactions. Record your withdrawals and deposits, debits and advances, charges and credits, transfers and balances, checks, and cash expenses. One-touch buttons make it fast and easy. Synchronize with your desktop, and export data to QIF files. I like the "Enter Transaction" screen on this application. It includes a number pad to enter the amount, and buttons for the most common types of transactions (see Screens 3 & 4).

KeepTrack is priced at $16.95 and is available for H/PCs, Ps/PCs and desktop PCs. A free demo is available at the developer's Web site. Contact: Ilium Software; E-mail: info@iliumsoft.com; Web: www.iliumsoft.com

Pocket Administrator

Lets you manage personal and business-critical information from your PC Companion. Pocket Administrator lets you access financial information, including portfolio tracking; access important personal account information; track banking, debit, credit card transactions, account balances and even organize bill payments as they occur; track business expenses as they occur; track efforts and time for client billing purposes; organize travel and other activities; manage business plans, personal goals and professional aspirations. You can view reports and lists of all stored data and transactions with a single screen tap. Pocket Administrator integrates with Pocket Contacts, and can be backed up to, and restored from, your desktop PC. A series of 22 Microsoft ACCESS Reports are available to registered users and can be downloaded at the developer's Web site.



Date	Num	Description	Payment	Clr	Deposit	Balance
6/1/98		Balance			975.00	975.00
6/3/98	123	Groceries	$ 96.00			879.00
6/3/98	124	Auto Repair	220.00			659.00
6/3/98	125	Lunch	9.50			649.50

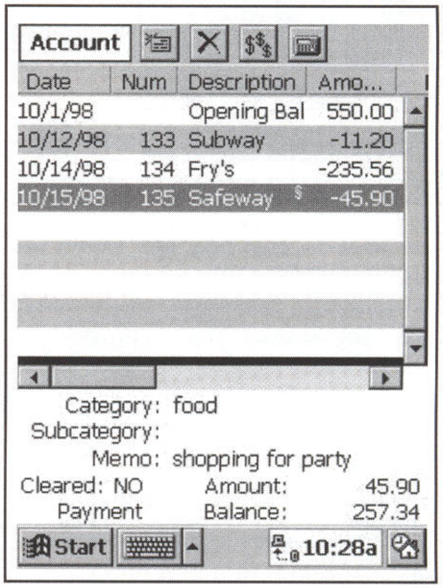
Screens 5 & 6: Pocket Finance is a checkbook application for both H/PCs and Ps/PCs that helps you track deposits and payments as well as exchange account entries with Intuit's Quicken and Microsoft's Money desktop applications.

Pocket Administrator is priced at $49.95 and is available for H/PCs. A demo is available at the developer's Web site (but it would not install on my HP 680 Jornada H/PC Pro.). Contact: Handheld Solutions Inc.; Web: www.handheldsolutions.com.

Pocket Finance

A "checkbook" application that can be used to track deposits and payments as well as exchange account entries with Intuit's Quicken and Microsoft's Money desktop applications. A separate free utility, PFMoney, translates and copies a Money98 database from your desktop PC to your H/PC or Ps/PC so it can be used by Pocket Finance (see Screens 5 & 6).

Pocket Finance is priced at $39.95 and available for H/PCs, H/PC Pros and Ps/PCs. A demo version indicated on the developer's Web site was non-functional when I tested it on 7/13/99. PFMoney is supposed to be on the Web site also, but I couldn't find it. Contact: LandWare, E-mail: sales@landware.com; Web: www.landware.com

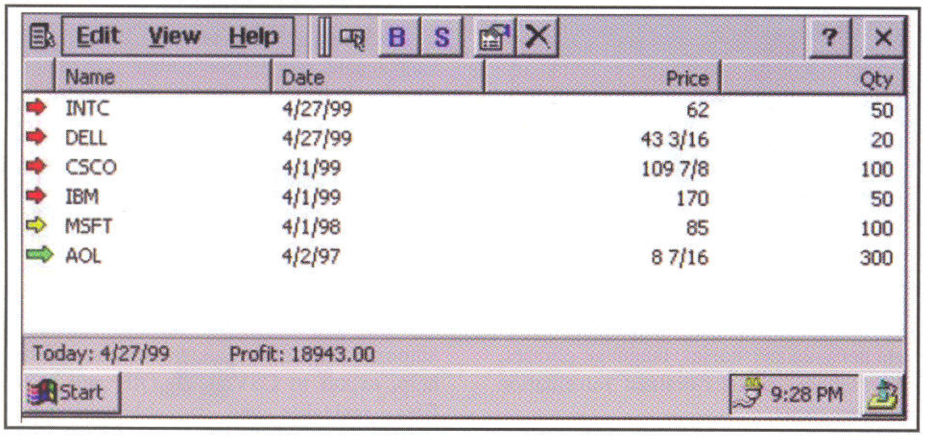


Date	Num	Description	Amo...
10/1/98		Opening Bal	550.00
10/12/98	133	Subway	-11.20
10/14/98	134	Fry's	-235.56
10/15/98	135	Safeway $	-45.90

Category: food
Subcategory:
Memo: shopping for party
Cleared: NO Amount: 45.90
Payment Balance: 257.34

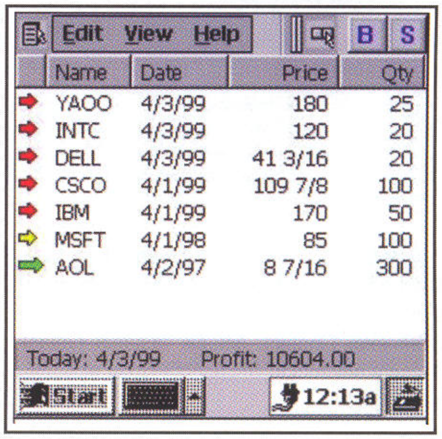
Pocket Quicken

This Pocket version of Intuit's popular Quicken program is available for the HP Jornada 680 only. It lets you track personal finances and synchronize your Pocket Quicken data with your desktop Quicken to keep your accounts up to date (see review, page 14, July/August 99 issue). Built into the HP Jornada 680. Not yet available to other PC Companions. Contact: On The Go Software, Web: www.onthegosoftware.com.



	Name	Date	Price	Qty
➡	INTC	4/27/99	62	50
➡	DELL	4/27/99	43 3/16	20
➡	CSCO	4/1/99	109 7/8	100
➡	IBM	4/1/99	170	50
➡	MSFT	4/1/98	85	100
➡	AOL	4/2/97	8 7/16	300

Today: 4/27/99 Profit: 18943.00



	Name	Date	Price	Qty
➡	YAOO	4/3/99	180	25
➡	INTC	4/3/99	120	20
➡	DELL	4/3/99	41 3/16	20
➡	CSCO	4/1/99	109 7/8	100
➡	IBM	4/1/99	170	50
➡	MSFT	4/1/98	85	100
➡	AOL	4/2/97	8 7/16	300

Today: 4/3/99 Profit: 10604.00

Screens 7 & 8: Stock Manager tracks and manages stocks, options or mutual funds. It is available for H/PCs and Ps/PCs.

Investment

MetaStock for Windows CE

Lets you view weekly or monthly charts of any stock, mutual fund, or index. Chart your securities in any of four different charting styles: Bars, Bars with Open, Candlesticks, and Lines. See the volume activity of each security shown as a histogram at the bottom of the chart. Zoom and scroll for a better view. Included with MetaStock for Windows CE is a full year's worth of price updates from Reuters Trend DataLink service. You can download updates on stocks, mutual funds, and indices via your Internet connection.

MetaStock is priced at $89 (12 month license) and is available for H/PCs. A free demo is available at the developer's Web site. Contact: Equis; E-mail: sales@equis.com; Web: www.equis.com.

OpTrax 1.0

A stock option tracker that calculates vesting schedules. OpTrax is shareware (registration $15) and is available for the H/PC. Download it at developer's Web site. Contact: Bn Ksoft; E-mail: info@bnksoft.com; Web: www.bnksoft.com

Quote Ticker Bar 5.2

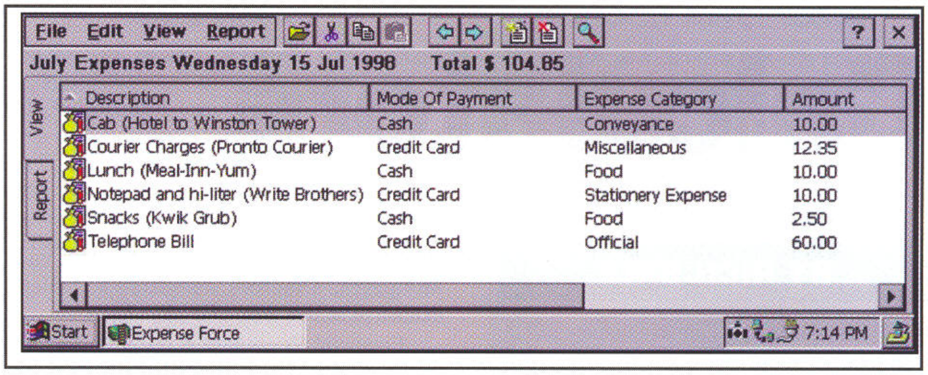
Deliver financial information right to your PC Companion via the Internet! You have access to up to 10 different servers and can get information on stocks, mutual funds, and market indexes 24 hours a day. Version 5.2 offers an easy to use interface and support for all Windows CE CPU types. This is a free upgrade for all existing QTB and QTBCE users. The program can be downloaded from Starfire's Web site and can be used 10 times before registration is required.

Quote Ticker Bar is priced at $20 and is available for H/PCs, H/PC Pros and Ps/PCs. A free demo is available at the developer's Web site. Contact: Starfire Software, Inc.; E-mail: sales@starfire-inc.com; Web: www.starfire-inc.com.

Stock Manager

Track and manage stocks, options or mutual funds. A useful trading or investment tool that lets you calculate how much you need to buy stocks, follow and assess purchases and sales transactions (Screens 7 & 8). Helps you track how much you paid for a share and calculate profit if you sell at a certain price.

Stock Manager is priced at $19.95 and is available for H/PCs and Ps/PCs. A demo is available at the developer's Web site. Contact: Boma Software; E-mail: info@bomasoft.com; Web: www.bomasoft.com



July Expenses Wednesday 15 Jul 1998 Total $ 104.85

Description	Mode Of Payment	Expense Category	Amount
Cab (Hotel to Winston Tower)	Cash	Conveyance	10.00
Courier Charges (Pronto Courier)	Credit Card	Miscellaneous	12.35
Lunch (Meal-Inn-Yum)	Cash	Food	10.00
Notepad and hi-liter (Write Brothers)	Credit Card	Stationery Expense	10.00
Snacks (Kwik Grub)	Cash	Food	2.50
Telephone Bill	Credit Card	Official	60.00

Screen 9: Expense Force collects information on business expenses in separate pages (shown here). Each page has a name, a base currency, and can be password protected.

Expense/Time Trackers

bTRACK

Part of the bPRODUCTIVE Essentials Pack, this program is a dedicated time, expense, and mileage tracker that lets you record expenses as they occur, keep accurate records of time with the stopwatch feature, record mileage traveled and expenses, integrate everything into one report, with totals available by all clients and all projects or by single client and project.

bPRODUCTIVE is priced at $89.95 and is available for the H/PCs, H/PC Pros and Ps/PCs. A separate free demo of bTRACK is available at the developer's Web site. Contact: bSQUARE Corporation; E-mail: info@bsquare.com; Web: www.bsquare.com/products/download/track.htm

Expense Force v1.01

Expense Force is an easy-to-use day-to-day expense tracking utility using pages to store the expense details (see Screen 9). Each expense page has a name, password and a base currency. Expense Force can create multiple expense pages and can password protect each of them. Expense views and customizable reports allow users to track expenses easily.

Price: $29.95; Use with H/PCs; Sales contact: MobileSoft, MobilePlanet, Windows CEOnline; Web: www.mobilesoft.com, www.mplanet.com, www.winceonline.com; Developer: Ruksun Software Technologies; E-mail: info@ruksun. com; Web: www.ruksun.com/wince/

HPC Bills and Reminders

Helps you track bill payments, due dates and other important things. After you enter in the date, frequency, description, and amount due for each bill, the program keeps a running total of what you owe and when payment is due.

HPC Bills is priced at $19.95 and can be used with H/PCs and Ps/PCs. A demo is available at the developer's Web site. Contact: Boma Software; E-mail: info@bomasoft.com; Web: www.bomasoft.com

TimeReporter for Windows CE

A Windows CE version of a popular desktop PC time tracker based on familiar time sheet format. TimeReporter lets you track time for your meetings, phone calls, and other daily events. You can run a timer for these events or directly enter the time. Billable time can be assigned to clients, projects, or activities. TimeReporter includes a complete desktop companion program. It is multi-user and multi-database capable and integrates with Quicken, Microsoft Excel, Access, Quickbooks and other popular desktop time and billing applications. Supports minimum times and "rounding-off" of time (for example, in case you bill in tenths of an hour). Also supports multiple currencies and mileage rates. TimeReporter works with Crystal Reports and includes 18 reports.

TimeReporter is priced at $149.95 and is available for H/PCs and H/PC Pros. A Ps/PC version may be coming. Free demo available on developer's Web site. Iambic Software; E-mail: info@iam bic.com; Web: www.iambic.com/time reporter. ■

Calculators

BY RICH HALL

This article looks at over twenty calculators you can add to your PC Companion. There are a few freeware programs in here, and most come with free demos so you can download them yourself to check them out. I've divided this article into the following types of calculators:

Business – used for business & financial calculations (interest rates, Time Value of Money and the like).

General – calculators that do simple math. I include timers in this section.

Multi-purpose – have a combination of the other categories built in.

Scientific – used for engineering, chemistry, and other higher-level mathematics functions. I include graphing and statistical programs in this category, unless they focus on business & finance.

Business

Financial Consultant

The Financial Consultant v2.0 is an advanced business calculator that combines many of the most popular features of HP and TI calculators. In addition to regular RPN and Algebraic input, Solver forms provide a unique "fill in the blanks" environment for solving a range of business calculations without having to memorize obscure keystrokes. Other features include: Statistics and Scientific functions, Investment analysis, Date calculations, Loans, Leasing and Mortgages, Onscreen amortization tables, extensive online help and user guide.

Financial Consultant is priced at $39.95 and has versions available for H/PCs or Palm-size PCs. I could not find a free demo. Contact: LandWare, Inc; E-mail: sales@landware.com; Web: www.landware.com

Fiscal Pro Financial Problem Solver

Fiscal Pro is a forms-based financial problem solver that handles amoritization, currency and unit conversions, data calculations, retail percentages, and investment analysis.

Fiscal Pro is priced at $39.95 (special bundle $49.95 includes Financial Consultant) and is available for H/PCs. Contact: LandWare, Inc; E-mail: sales@landware.com; Web: www.landware.com

★ Pocket BizCalc

Pocket BizCalc for Windows CE is a full-featured business/financial software calculator that emulates the HP-12C (see Screen 1). Using RPN logic, it performs the following calculations as well as others: loan/mortgage, discounted cash flow, bond, compound interest, leasing, actuarial and markup functions, depreciation, and amortization schedules.

I liked the electronic tape display that shows the calculations you've made in the series. The items in the tape display can be annotated, date/time stamped, and saved for later use. Remember that Pocket BizCalc is an RPN (Reverse Polish Notation) calculator. You enter data first and then the operator. For example, to divide 9 by 9 you press 9, press ENTER, press 9 again, and then press / (the division symbol).

Pocket BizCalc is priced at $39.95 and is available for H/PCs, H/PC Pros and Ps/PCs. A free demo is available at the developer's Web site. Contact: Odyssey Computing, Inc.; E-mail: info@odysseyinc.com; Web: www.odysseyinc.com

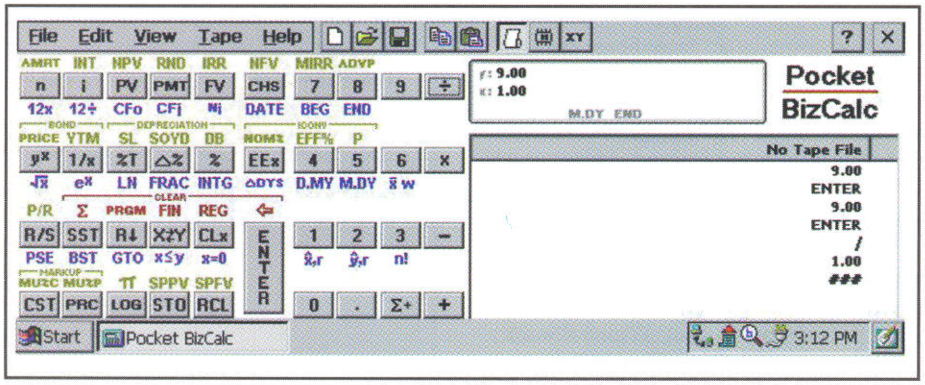
Pocket MBA-Calc

A calculator for business, retail, finance, banking, and real estate industry professionals. Pocket MBA-Calc operates like the Texas Instruments BA-II Plus calculator, but with a number of additional features. Similar to BizCalc, but using the more common algebraic logic, Pocket MBA-Calc performs the following calculations as well as others: Annuity/Actuarial, Amortization, Arithmetic, Bond, Compound & Simple Interest, Date, Depreciation, Discounted Cash Flow (NPV, IRR), Loan/Mortgage, Interest Conversions, Markup and Math Functions. It also incorporates a tape display.

Pocket MBA-Calc is priced at $39.95 and is available for H/PCs and Ps/PCs. Contact: Odyssey Computing; E-mail: info@odysseyinc.com; Web: www.odysseyinc.com.

Tipster

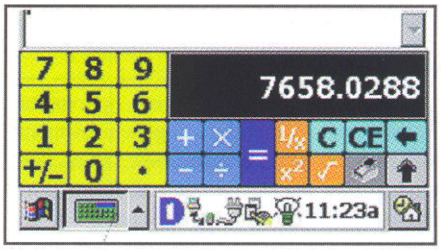
A simple one-touch calculator that lets you determine tips and amount per guest quickly and easily. Tipster is freeware and is available for H/PCs and Ps/PCs. Download at developer's Web site. Contact: Ilium Software; E-mail: info@iliumsoft.com; Web: www.iliumsoft.com



```
x: 9.00
y: 1.00
```

```
9.00
ENTER
9.00
ENTER
/
1.00
###
```

Screen 1: Pocket BizCalc for Windows CE is a full-featured business/financial software calculator that emulates the HP-12C.



Screen 2: RapidCalc is a basic calculator that is accessed from the soft-input panel window on your Palm-size PC and pops up in the lower 1/3 of your screen, allowing you to perform calculations while working with other applications.

TValue v.1.0

Calculator that lets you solve financial problems involving irregular payments, balloons, and changing interest rates.

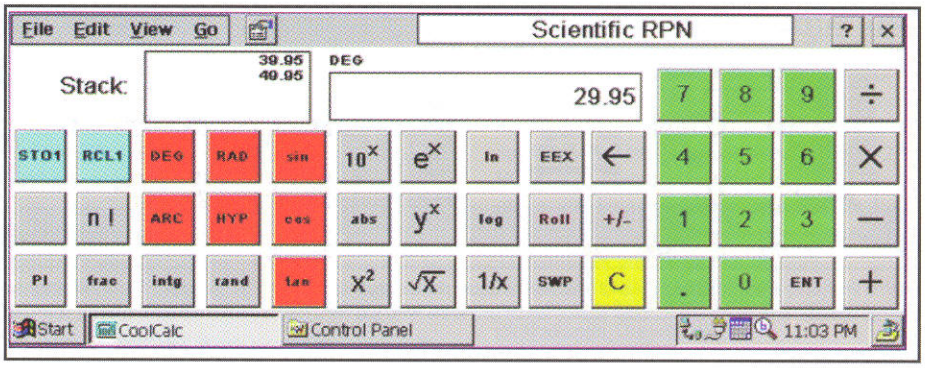
TValue is priced at $59.00 and is available for H/PCs. Contact: TimeValue Software; E-mail: info@timevalue.com; Web: www.timevalue.com/tvaluece.htm

General

★ RapidCalc

RapidCalc is a basic calculator that is accessed from the soft-input panel window on your Palm-size PC (see Screen 2). RapidCalc lets you perform calculations while working with other applications, and easily paste results into another document. RapidCalc also give you the option of using Note Taker (any text editor) as a "paper-tape" of your calculations. This is a very handy way to do basic calculations on a Palm-size PC.

RapidCalc is priced at $13.95 and is available for the Ps/PC. A free demo is available at the developer's Web site. Contact: Developer One; E-mail: sales@developerone.com; Web: www.developerone.com


File Edit View Go
Scientific RPN
? ×
Stack:
39.95
49.95
DEG
29.95
STO1 RCL1 DEG RAD sin 10^x e^x ln EEX ← 4 5 6 ×
n! ARC HYP cos abs y^x log Roll +/- 1 2 3 −
PI frac intg rand tan x² √x 1/x SWP C . 0 ENT +
7 8 9 ÷
Start
CoolCalc
Control Panel
11:03 PM

Screen 3: CoolCalc gives you seven calculators in one program, plus the ability to create macros and customize calculators. It is available for all H/PCs, H/PC Pros, and Ps/PCs.

ToolPack 1.02

A suite of software utilities that includes EzCalc, a full-function calculator including conversion routines.

ToolPack is priced at $49.95 and is available for the H/PC. A free demo is available at developer's Web site. Contact: Ezos Ltd.; Web: www.ezos.com/

★ SwimPro

A swim timer and performance calculator for Windows CE. Features include multiple swim timers; configurable for any pool; hotkeys; automatic calculations for lap time and a lap counter. SwimPro does calculations for swimming speed, stroke rate, and stroke length. Calculations are always shown on the main screen for the most recently completed set of times, as well as the one previous to that, so that changes (as the swimmer is tiring) can be seen. I'm not a swimmer and don't attend swimming meets, but like the look and functioning of this program.

SwimPro is priced at $34.95 and is

CEcity

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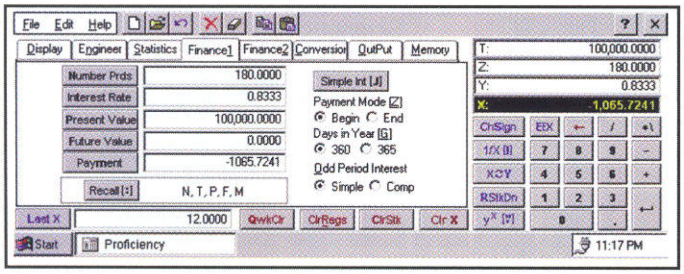
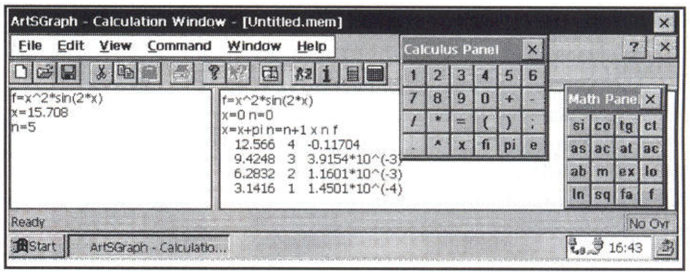


Number Prds 180.0000
Interest Rate 0.8333
Present Value 100,000.0000
Future Value 0.0000
Payment -1065.7241
Recall [:] N, T, P, F, M
Payment Mode [Z] ● Begin ○ End
Days in Year [G] ● 360 ○ 365
Odd Period Interest ● Simple ○ Comp
T: 100,000.0000
Z: 180.0000
Y: 0.8333
X: -1,065.7241
Last X 12.0000

Screen 4: Proficiency is one of the most powerful calculators available, providing business, financial, statistical, scientific, engineering and computer science functionality to the H/PC and H/PC Pro.


ArtSGraph - Calculation Window - [Untitled.mem]
File Edit View Command Window Help
Calculus Panel
Math Panel
Ready
No Ovr
Start
ArtSGraph - Calculatio...
16:43

```
f=x^2*sin(2*x)
x=15.708
n=5
```

```
f=x^2*sin(2*x)
x=0 n=0
x=x+pi n=n+1 x n f
  12.566  4  -0.11704
  9.4248  3  3.9154*10^(-3)
  6.2832  2  1.1601*10^(-3)
  3.1416  1  1.4501*10^(-4)
```

Screen 5: Use ArtSGraph for simple arithmetic, plotting elementary functions, differential calculus, harmonic analysis, optimization, plotting of equipotential lines and field of directions.

available for H/PCs and Ps/PCs. A free demo is available at the developer's Web site. Contact: Cambridge Computer Corporation; Web: www.cam.com

Multi-purpose

★ CoolCalc

This is one of my favorite calculator programs. CoolCalc gives you a number of different calculators in one program, plus the ability to customize calculators and create your own. I particularly like the macro feature, which lets you automate keystrokes and functions, and assign them to a calculator key. This makes CoolCalc highly customizable for number crunching professionals (see Screen 3).

CoolCalc gives you two basic calculators and 2 scientific calculators (with and without Reverse Polish Notation), a computer math calculator, plus the ability to solve currency conversion, loans, and Time Value of Money problems. You can reposition any calculator button with your stylus, and change the function, sound, and appearance of each button. Over 100 different functions are available.

Desktop IR Link

Fast, easy IrDA coonection for your desktop PC and Win CE, Psion or PalmPilot. Just plug the Aegis IR Link into your PC serial port and go. No power supplies and no batteries needed. PalmPC users, forget your bulky docking cradle. Low power, high integration, based on custom IC. Less than 2" square, includes a 6 foot serial extension cable, drivers and instructions. Sharp Wizard and HP 200LX versions available. **$39.95** list. Resller and OEM pricing available.

Aegis Technologies LLC
520-773-0189
www.primenet.com/aegistec
aegistec@primenet.com

CoolCalc is priced at $29.95 and has versions available for all H/PCs, H/PC Pros and Ps/PCs. A demo is available at the developer's Web site. Unfortunately, only the Basic calculator functions in the demo. Contact: Applian Technologies; E-mail: info@applian.com; Web: www.applian.com.

★ Proficiency

A powerful RPN (Reverse Polish Notation) calculator providing business, financial, statistical, scientific, engineering and computer science functionality (see Screen 4). Proficiency provides functional emulation of Hewlett-Packard Company's HP-12C financial calculator, most of the HP-15C engineering/scientific calculator and portions of the HP-16C computer science calculator. Proficiency also comes with an extensive library of preprogrammed functions. This is one of the most powerful and complete calculator solutions available for Handheld PC users.

Proficiency is priced at $49 and is available for H/PCs and H/PC Pros only. Unfortunately, no demo is available. Contact: MVA Software, Inc.; E-mail: info@mvasoftware.com; Web: www.mvasoftware.com

Scientific

★ ArtSGraph

ArtSoft bills this program as a "powerful mathematical/scientific calculator." I played with the demo version a little and used it to calculate and plot some simple algebraic functions (see Screen 5). It was a little difficult figuring out the proper syntax for the algebraic expressions, mostly because I haven't done it in years. Figuring out the menu items and using the Math and Calculus panels was fairly easy. ArtSGraph comes with an online Help function that describes the functions and walks you through simple examples. You can use ArtSGraph for simple arithmetic, plotting elementary functions, differential calculus, harmonic analysis, optimization, plotting of equipotential lines and field of directions. I have no personal need for this type of program, but it could be used to teach and practice mathematics.

ArtSGraph is price at $20.00 and can be used with H/PCs running Windows CE 2.0 or above. English and Russian language versions are available for SH3 and MIPS processors, but not the ARM processor found in the HP Jornada 820. You can download a demo version of the program at developer's Web site. Contact: ArtSoft; Web: www.artsoft.ru/eng/artsghpc.htm

CalCE

This calculator supports arithmetic, base conversion, logarithm functions, statistics, and memory functions. All features are accessed from a single screen. CalCE is an easy-to-use scientific calculator program.

CalCE is price at $19.95 and can be used with any H/PC running Windows CE 2.0 or above (SH3 and MIPS processors only). A demo is available at the developer's Web site. Contact: Queen image; Web: www.queenimage.com/

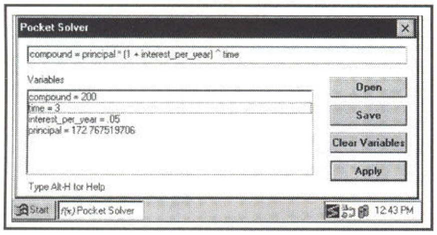
Calcy Force v1.0

Calcy Force is another simple, single-screen scientific calculator for the H/PC. It supports base conversions, arithmetic, logical, trigonometric and logarithmic functions. Calcy Force is very easy to use.

Calcy Force is priced at $35 and can be used with H/PCs running Windows CE 2.0 or above (SH3 and MIPS processors only). A demo is available at the developer's Website. Contact: Ruksun Software Technologies; E-mail: info@ruksun.com; Web: www.ruksun.com/wince/

Formulae 1 CE

Graphing calculator for Windows CE designed for the teaching and exploration of


Pocket Solver
Variables
Open
Save
Clear Variables
Apply
Type Alt-H for Help
Start
f(x) Pocket Solver
12:43 PM

compound = principal * (1 + interest_per_year) ^ time

compound = 200
time = 3
interest_per_year = .05
principal = 172.767519706

Screens 6 & 7: Pocket Solver lets you type in an equation, enter variables, and solve for the unknown variable.

mathematics. Gives the user the ability to see the intermediate STEPS taken to solve any problem. Supports Arithmetic, Polynomials, Matrices, Functions, Algebra, Calculus, Graphing, Finite, Trigonometry, and more.

Formulae 1 CE is a free (beta) and is available for H/PCs. Download it at the developer's Web site. Contact: Poliplus Software; E-mail: cbazza@poliplus.com; Web: www.poliplus.com/

GraphCE

Graphing program that accepts columnar data in text or spreadsheet format from the Clipboard, and generates two dimensional line and scatter graphs.

GraphCE is freeware and is available for the H/PC. Download it at www.execpc.com/~fdeck/graphce/

Graphics Plotter

Turns your Palm-size PC into a graphic calculator that can plot 2D functions. Calculator-like button input makes it easy to enter expressions from the touch screen.

Graphics Plotter is shareware (registration $14.95) and is available for Ps/PCs. Download it at the SWForCE Web site: www.swforce.com/

PalmSciCalc

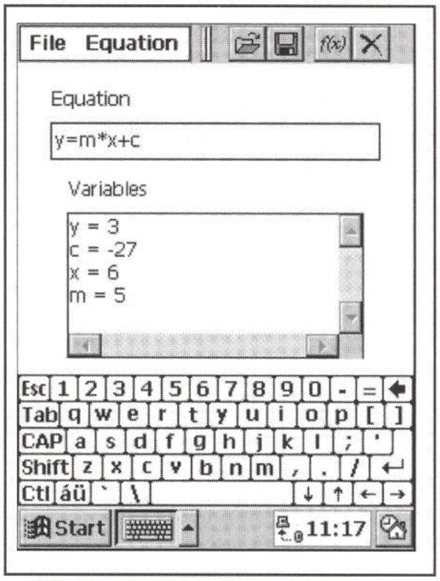
Add a scientific calculator to your Palm-size PC. PalmSciCalc is freeware and is available for the Ps/PC. It can be downloaded at www.cemonster.com.

Pocket GraphCalc

A graphic calculator that plots equations and performs other types of advanced calculations. Pocket GraphCalc is priced at $40 and is available for H/PCs. Contact: Surerange Analysis Ltd.; E-mail: info@surerange.com; Web: www.surerange.com

★ Pocket Solver

A calculator program that lets you type in an equation and enter values for all but one of the variables (see Screens 6 & 7). Unlike a spreadsheet, any unknown variable can be found without having to rearrange the equation. This is a cool little program primarily of interest to students, I think.


File
Equation
Equation
Variables
Start
11:17

y=m*x+c

y = 3
c = -27
x = 6
m = 5

Pocket Solver is priced at $32 and is available for H/PCs or Ps/PCs. Contact: Surerange Analysis Ltd.; Fax: +44 (0) 1483 304960; E-mail: info@surerange.com; Web: www.surerange.com

proCALC ce

Designed for technical professionals who need RPN or algebraic input logic, proCALC ce equips the H/PC with a problem solving environment that lets users perform such calculations as hyperbolics, trigonometrics, one or two variable statistics, linear regression, rectangular/polar, radian/degrees and base conversions.

proCALC ce is priced at $44.95 and is available for H/PCs. Contact: LandWare, Inc; E-mail: sales@landware.com; Web: www.landware.com

Tascal Tools Vol.1

A suite of H/PC utilities that includes Tascal Calc, an advanced scientific calculator for math from algebra to advanced calculus. Tascal Tools is shareware ($20 registration fee) available for H/PC. Download it at www.cemonster.com ■

Surerange
'Software on the Move'

Windows CE Software for Handheld and Palm-size PCs

New... Time and Expenses for the PPC

Record time, expense and travel information on your Palm-size PC. Specially written to minimize character input while on the move!

View Report Options
Between 01-Jun-99
and 30-Jun-99
Description
Project
Start

New... Special Casio E100 Games

The latest versions of Planetoid, Speedway, Spacefighter and Cybersnake now provide true color, enhanced sound and support the special cursor pad and machine buttons.

New... HPC Pro Releases

An increasing number of products now support the Handheld PC Pro. Visit our web product compatibility matrix for more information.

Updated... French, German and Spanish

The latest dictionaries now provide up to 108,000 words.

Some of our other Products...

Database
First Aid
Iron Rain
Spanish
Timer
SpaceFighter
Solver
Crossword
CyberSnake
Thesaurus
Speedway
BigFoot
ModPlayer
Spreadsheet
Solitaire
GraphCalc
FunPack1
Unicorn

Visit our website to download freeware, order products or to learn more about Windows CE

http://www.surerange.com/ce/

Secure Online Ordering
Immediate Download

Spreadsheets in Your Pocket!

One of the least-used Windows CE applications holds the most promise for improved productivity.

[This article is primarily about Pocket Excel, a spreadsheet program found on Handheld PCs. However, the sidebar on page 27 lists three Spreadsheet programs available for the Palm-size PC.]

BY JOHN KENNEDY

I have the suspicion that many Windows CE device owners are put off by Pocket Excel, thinking it a boring business tool only useful to accountants. If you are one of these people, here's a newsflash: Pocket Excel is probably one of the most underrated programs on the Handheld PC. I use it more than any other application, and it transforms the Handheld PC into a genuinely useful portable computer.

Great for collecting and tabulating data

A spreadsheet is great for tabulating information. Forget Pocket Word – Pocket Excel is the best tool for organizing data into columns and rows. It's a cinch to enter long lists of numbers, or to collect data "in the field" for later analysis.

Spreadsheets are essentially a grid of columns (described by a number) and rows (described by a letter). Where the column and row meets is an individual "cell." So the first cell in the top left of the spreadsheet (or "worksheet") is A1; next to it is B1; below A1 is A2; and so on. You can enter numbers, text, formulas, time and more into each cell. Pocket Excel allows you to select the format of the cell. For example, you can explicitly set it up so that a cell (or an entire column or a row) displays numbers as monetary values, complete with currency symbols.

For many users, this is all you need to know: the spreadsheet is merely a handy way to keep facts and figures organized in an easy-to-use table. You can use it for a checkbook, an order form, a shopping list, and more. When you format a spreadsheet to look the way you want it, and do the things you want it to, you may want to save it as a template and use it over and over again. For example, once you've created the perfect shopping list, there's no point re-typing it all every single time.

The power of a formula

A spreadsheet can be used to create a simple list, but its real power is its ability to perform calculations using formulae. For example, instead of entering a fixed value (say, 42) into a cell you can enter a formula (say, =SUM(A5:A10). This tells Pocket Excel that the value of this cell is equal to the sum of all the numbers in the column of cells A5 through A10. The syntax of the cell formula is very strict, but is also very simple. You only need to look at a few examples to get the idea.

Formulas are very handy if you have to work out a large number of similar calculations. The mathematical and logic expressions available for use in Pocket Excel (or any spreadsheet program) means that it's possible to solve some very complex problems. However, we won't cover advanced uses of spreadsheets in this article – there are plenty of on-line resources and books that cover those. Instead we'll look at a few simple examples. These examples are very well suited to the portable Windows CE devices: you'll probably be surprised how flexible and useful Pocket Excel will be.

Some simple examples of Pocket Excel spreadsheets

Shopping List – There are one or two full-featured shopping list programs available for Windows CE devices. But you can create a simple but functional shopping list with Pocket Excel (see Screen 1). I've placed the title, "Shopping list," in cell A1. Below it, in column A, I've listed the items I've purchased. Column B lists the individual, or "unit price." Column C lists the quantity of each item I purchased. Column D lists the total price for each item (unit price * quantity). At the bottom, I total up the entire contents of Column D. I use formulas in Column D to multiply the unit price by the quantity. So in cell D3 I've entered =(B3*C3), which tells Pocket Excel that the value in this cell = the value in cell B3 multiplied by (*) the value in Cell C3. Once I've entered this formula in cell D3, I simply copy it (press ctrl-C), move to cell D4 and paste it (press ctrl-V). Pocket Excel automatically adjusts the formula to read =(B4*C4). I continue to copy the formula to cells D5, D6, and D7. Finally, I create a formula in cell D8 that will total the prices in column D. The formula reads =SUM (D3:D7). The end total gives you a good idea how much you need to pay when you get to the checkout.

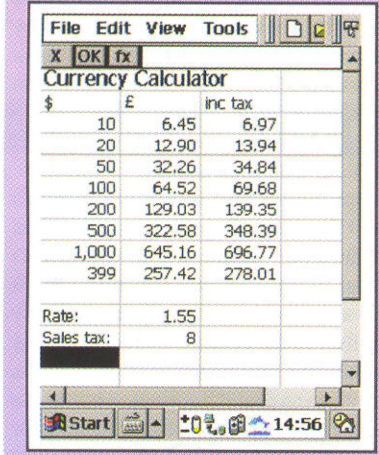
Weight record – Spreadsheets are great for storing and organizing lists of numbers, be they ages, attendance records or the number of pieces of fruit appearing on your tomato plants. Having the spreadsheet on your handheld means you can carry it around with you, and then return to base and

John Kennedy (johntkennedy @sticky.net) is a technical journalist based in Northern Ireland (although he's open to offers). When he's not writing, he's programming Windows CE applications for Sticky Software.

Palm-size PC Spreadsheet Programs

One of the most frequently asked questions on the various Windows CE newsgroups and mailing lists is, "Where can I get Pocket Excel for the Palm-size PC?" Sadly, the answer is that you can't. Pocket Excel is built into the Handheld PC series, but not the Palm-sized PCs. I think Microsoft underestimated the demand for such a useful program. There are rumors that Microsoft is developing a Palm-size PC version of Pocket Excel, but nothing has been announced. Fortunately, third-party software developers have come to the rescue with the following applications:

SpreadSheet from bSQUARE



Currency Calculator		
$	£	inc tax
10	6.45	6.97
20	12.90	13.94
50	32.26	34.84
100	64.52	69.68
200	129.03	139.35
500	322.58	348.39
1,000	645.16	696.77
399	257.42	278.01
Rate:	1.55	
Sales tax:	8	

bSquare SpreadSheet crams a lot into the Palm-size PC format. Although the list of functions doesn't match that of Pocket Excel, there are enough to make it a very useful tool.

SpreadSheet crams a lot into the palm-size format. Although the list of functions doesn't match that of Pocket Excel, there are enough to make it a very useful tool. This spreadsheet can import and export files in Pocket Excel format, making it easy to share sheets from other folders and sync files with your desktop. It also lets you import comma-delimited files (*.csv) to your Ps/PC. This lets you view and edit any comma-delimited file, such as a database or other spreadsheet file on your device. bSQUARE supports standard operations (+, -, /, *, ^, %, &); Date functions; Logical functions; Financial functions; Mathematical functions; Statistical functions; and Text functions. You can have up to 50 Worksheets in a Workbook, Hide row/column headers and scrollbars to view the maximum amount of data on your Ps/PC screen, Cut/copy and paste a cell or range of cells, and more. A note on the bSquare Web site says that Microsoft Excel is required on the desktop computer to create spreadsheets to view on your Palm-size PC.

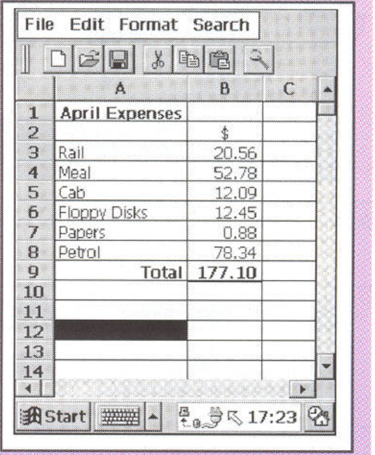
bSQUARE SpreadSheet is price at $39.95. A demo version is available on bSQUARE's Web site: www.bsquare.com.

Pocket Spreadsheet from Surerange

Pocket Spreadsheet offers a subset of Excel capabilities – essentially the mathematical operators and not much else. That said, it's still a useful tool capable of creating all the examples I've listed in this article.

Pocket Spreadsheet lets you select rows, columns, multiple adjacent cells; Cut, Clear, Copy and Paste cells; edit formula; save column and row sizes; search for formula/text. Max worksheet size 50 Rows x 30 Columns (1500 cells), 24 built-in functions, can be synchronized with Excel spreadsheets. Pocket Spreadsheet and its worksheets can be stored on CompactFlash memory.

Pocket Spreadsheet is priced at $16. A demo version is available at www.surerange.com/sheet.html.



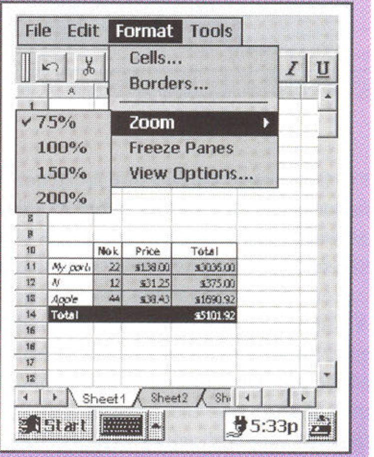
	A	B	C
1	April Expenses		
2		$	
3	Rail	20.56	
4	Meal	52.78	
5	Cab	12.09	
6	Floppy Disks	12.45	
7	Papers	0.88	
8	Petrol	78.34	
9	Total	177.10	
10			
11			
12			
13			
14			

Pocket Spreadsheet is an inexpensive program for simple lists and mathematical operations.

PTab

This full-featured spreadsheet program for the Palm-size PC comes with the following features: up to 256 worksheets with 16384 rows x 256 columns each; includes 44 built-in scientific, statistical and financial functions; Multiply Undo/Redo File: New, Open, Save, Save as, Delete Properties; Cut, Copy, Paste, Clear (All, Content, Formats), Fill (Right,, Down) cells; Set row height and column width; Insert function, Quick sum, Pointing; Format: Number format (General, Financial, Percentages…), Alignment (General, Left, Right, Center), Font, Size, Color, Background Color, Bold, Italic, Underline; Borders (Left, Right, Top, Bottom, Outline); Zoom (75%, 100%, 150%, 200%); Freeze Panes (rows and columns freezing); Show/hide: Column and row titles, Gridlines, Zero values; Sheets: New, Rename, Delete; Go to, Find, Sort (Ascending, Descending, up to 3 keys).

PTab is priced at $40.00. A demo version is available at the Z4Soft Web site: www.z4soft.com/.

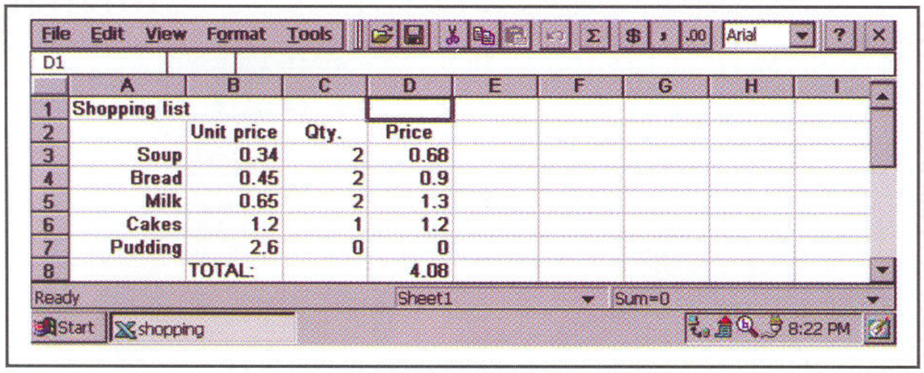


10		Nok	Price	Total
11	My pork	22	$138.00	$3036.00
12	N	12	$31.25	$375.00
13	Apple	44	$38.43	$1690.92
14	Total			$5101.92

PTab is a new, and from its description very powerful, spreadsheet program for the Palm-size PC.

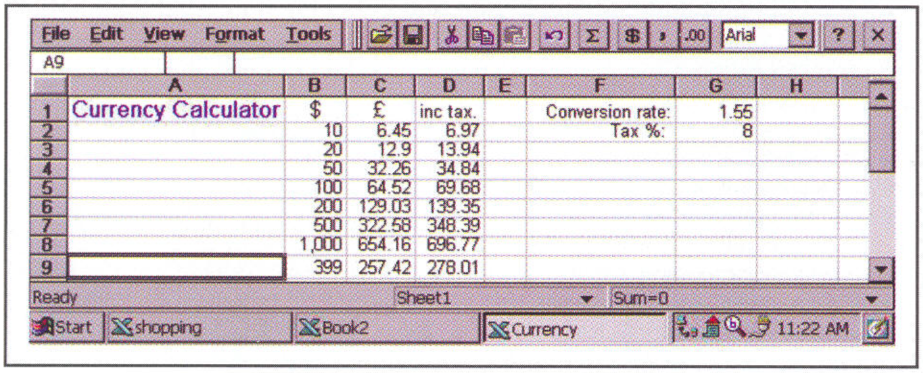
copy it over to your desktop for further analysis. In this household a spreadsheet keeps track of my wife's weight, which isn't as cruel as it sounds – she's pregnant, and it's a great way to keep track of junior's development. Another spreadsheet notes the frequency of baby movements — another important developmental figures.

Tracking expenses – The portability of H/PCs and Palm-size PCs means that they are there with you most of the time. Instead of writing down expenses and the like on scraps of paper and then losing them, why not create a simple spreadsheet to track what you did and how much you spent. Again, you can purchase dedicated expense tracking programs for H/PCs and Palm-size PCs, but a simple spreadsheet might be all you need.



	A	B	C	D	E	F	G	H	I
1	Shopping list								
2		Unit price	Qty.	Price					
3	Soup	0.34	2	0.68					
4	Bread	0.45	2	0.9					
5	Milk	0.65	2	1.3					
6	Cakes	1.2	1	1.2					
7	Pudding	2.6	0	0					
8		TOTAL:		4.08					

Screen 1: You can create a simple Shopping List spreadsheet to prepare for shopping and to track expenses.



	A	B	C	D	E	F	G	H
1	Currency Calculator	$	£	inc tax.		Conversion rate:	1.55	
2		10	6.45	6.97		Tax %:	8	
3		20	12.9	13.94				
4		50	32.26	34.84				
5		100	64.52	69.68				
6		200	129.03	139.35				
7		500	322.58	348.39				
8		1,000	654.16	696.77				
9		399	257.42	278.01				

Screen 2: This currency conversion spreadsheet lets me enter the current conversion rate for $ U.S. to £ U.K.

Currency conversion – One of my favorite uses for spreadsheets is a currency converter for when I travel to the U.S. (see Screen 2). This spreadsheet lets me enter the current conversion rate for $ U.S. to £ U.K. A simple formula converts the numbers I enter in column B to Pounds Sterling. I've added an extra column to automatically add the sales tax into the figure. I also include a table of standard values (10, 50, 100 and so on) as this helps get a quick feel for how much you are about to spend.

Timetable Planning – The table format is often used for creating timetables, and again, Pocket Excel is the ideal tool. It's great for students and essential if you are planning a magazine and trying to keep track of overdue articles from lazy writers. *[EDITOR'S NOTE: I do keep such a spreadsheet, but John's name is not found in the "lazy writers" column.]* I also use it when planning long trips, as it helps manage flight times.

Sports score cards – A spreadsheet can help your leisure time too. A little effort spent making up a score card template makes it easy to keep track of your favorite sports. When you get the figures home you can instantly get all the statistics you need.

I've also found it handy to keep a little spreadsheet table with the current postage costs, depending on the weight of the item. You could also use a spreadsheet for cooking measurements, temperature equivalencies, and all manner of values associated with various hobbies and pastimes.

Staying in synch

The beauty of using Pocket Excel is that you can easily exchange a spreadsheet with your desktop PC and view it in the desktop version of Excel. When you use Windows CE Services to move a Pocket Excel spreadsheet to your desktop PC, the spreadsheet is automatically converted to a format read by the desktop PC version of Excel (and most other desktop PC spreadsheet programs). In fact, you can set Windows CE Services up to automatically synchronize Pocket Excel spreadsheets with their desktop counterpart.

The process of conversion also works in reverse. You can drag a standard Excel spreadsheet (or Lotus 1-2-3 worksheet) from your desktop PC to your H/PC and it will be converted and ready to read by Pocket Excel. Of course, there are a few limitations: the full MS Office Excel has grown into a mammoth program with far too many options to list or include in a smaller program like Pocket Excel. Only the core features are included, but they suffice for most simple day-to-day spreadsheets.

Previous versions of the H/PC ran into problems with Pocket Excel. An H/PC user would create a Pocket Excel spreadsheet, attach it to an e-mail, and send it to an associate with a desktop PC. If that associate did not have Windows CE Services, he or she had no way to convert it to a format they could use. The H/PC Pro version of Pocket Excel fixed that problem. H/PC Pro users can now save a Pocket Excel spreadsheet in the standard desktop Excel format. They can then attach it to an e-mail and send it to an associate without any problems. Likewise, an associate can e-mail an H/PC Pro user a standard Excel spreadsheet.

Most valuable of the least used

I've asked around and I'm amazed that many users haven't even launched Pocket Excel. It's an easy-to-use and extremely useful application, which lets you customize your H/PC to carry the information you need. It's a great application sitting right under your nose, and it doesn't cost you an extra cent – check it out! ■

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http://www.phatware.com

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Remote Video: Monitoring The World From Your H/PC

Will Windows CE be the driving force behind mobile video in the new millennium?

BY OLINGA TA'EED, PHD

The popular science fiction series Star Trek showcased a lot of futuristic technology, from warp drive to portable communicators. It's interesting that the Star Trek communicators are audio devices — even Flash Gordon had a video communicator. Perhaps the show's writers knew that in reality, the technology involved with mobile video communications is not trivial. Well, in reality, things are about to change. In the first year of the new millennium, mobile video communications will become part and parcel of daily life. And the driving force behind this development may very well be small, inexpensive, color-screen devices powered by Windows CE.

Off-the-shelf technologies the key

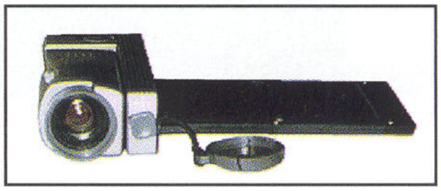
Mass consumerism has produced many technological breakthroughs. But a simple, cost-effective way to send and receive video anywhere remains the holy grail for many product developers. At the same time, and somewhat ironically, the search for the CE 'killer-app,' the one that will bring Windows CE hypergrowth and respectability, has so far exasperated mobile computing strategists.

Mobile video has been available for the past ten years — but at too high a price for widespread acceptance. The secret to bringing costs down is using off-the-shelf technologies. Part of this solution involves the use of public GSM/PCN (mobile phone) networks for transmitting data as opposed to costly private networks. In the UK the four mobile network operators cover 99% of the country and provide data rates at 9600 b/s baud. Soon they will be going to 14400 baud. This may not seem like much, but using currently available data compression technology it is sufficient to achieve frame rates as high as 14 per second. (This is within striking distance to the 17 frames per second needed by the visual cortex to assimilate real time video.)

Video transmission and monitoring systems have traditionally been complex technical affairs, with no reasonably priced one-box solutions. Windows CE is poised to change this. Not only do the newer Windows CE devices have powerful processor and high-resolution color displays, most have built-in communications capabilities. In addition, wireless transmitter/receivers are becoming more widely available. Finally, we are starting to see more digital camera solutions for Window CE. The Sharp has had a digital camera PC Card available for over a year for its Mobilon 4500/4600 and now the new MobilonPro PV 5000 (see Screen 1). And rumor has it that Casio has already released a CompactFlash digital camera in Japan, which works with it's E-100 Palm-size PC. Even though these two examples are still-frame cameras, there's little technological difference between still-frame and video. More digital camera cards, still-frame and video, are just round the corner.

Open Circuit Television and Windows CE

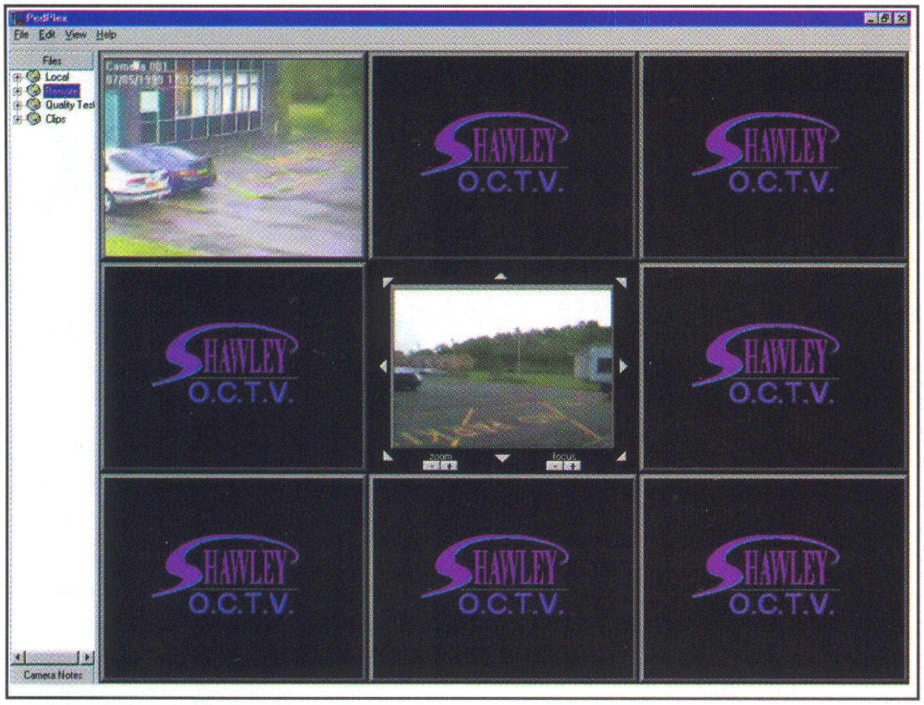
The Security sector and particularly CCTV (Closed Circuit Television) has most readily accepted and implemented mobile video. Although Security is traditionally a very technologically conservative sector, a concept called OCTV (Open Circuit Television) has emerged. OCTV allows a camera positioned anywhere to feed video through commercial mobile networks to monitoring positions anywhere in the world. Windows CE is involved at both ends.



Screen 1: Sharp's Digital Camera Card slips into the PC Card slot of the Mobilon 4500, 4600 and PV 5000, adding a single-image digital camera to Sharp's H/PCs.

In the UK (the largest user of CCTV systems in the world), OCTV is already being used in smaller towns which cannot afford CCTV, and by roaming police officers. Because OCTV is wireless at both camera and monitoring ends, there are none of the installation costs associated with CCTV (digging holes in the ground to lay

Dr. Olinga Ta'eed is involved in the development of mobile video solutions utilizing Windows CE devices. He is a shareholder in a number of companies involved in this, including Pedagog Limited (10 man CE development team), Shawley Limited (CCTV Manufacturing), and Prestige Network Limited (Language Technology). He has held senior positions in a number of other companies and is the recipient of awards including the 1995 European IT Award. He remains external PhD Supervisor at the University of Wolverhampton, Department of Computing Studies, and has over 50 papers to his credit, including for *The Times*.



Screen 2: The Sharp TriPad H/PC Pro has been used as a monitoring device for OCTV systems. Shown here are two camera views from a security system displayed on the TriPads 640x480, 256 color screen.

down wiring - typically 80 per cent of total system cost). And because it is portable at the monitoring end, control room costs (usually of the order of $150,000 per year for three security guards) are considerably reduced. (The TriPad from Sharp has already been used as an effective monitoring device for mobile systems; see Screen 2.) OCTV is totally flexible at both ends of the CCTV system, allowing for rapid deployment. It is a rare four-way win-win situation; the end-user gets lower prices, the mobile network providers get massive data traffic, the CE manufacturers get a volume market, and the CCTV industry discovers a completely new and untapped market.

Inexpensive solutions to mobile video needs

Windows CE Handheld PCs are also being used as keyboard controllers within the CCTV sector, replacing made-to-order $1,500 keyboards, which require intelligence for telemetry control. With voice recognition, voice feedback, handwriting recognition, etc., they are ideal for this environment. In addition, they can use their IrDA capability to configure cameras positioned on lampposts and sides of buildings without having to send a technician out to open up the box. In fact, an entire CCTV system can be controlled by a single guard, from a single H/PC.

Presently, UK Police are experimenting with transmitting video to and from Palm-size PC devices using GSM/PCN networks. Police officers carry Ps/PCs connected to chip CCD cameras on their lapels, and with one touch are able to send live video to other police officers, headquarters, helicopters, police cars, etc. The implementation of MP3 technology in Windows CE devices will considerably improve the audio performance of such applications. The low cost and portability of such systems will bring them to Neighborhood Watch schemes. And the ability to rapidly deploy such systems is a key advantage for emergency health workers, police forces, special services and the military. Systems are currently being prototyped to enable physicians, paramedics, firefighters and other emergency service personal to pass live-action video back to remote specialists. All these OCTV applications will cost far less than closed circuit, private network systems.

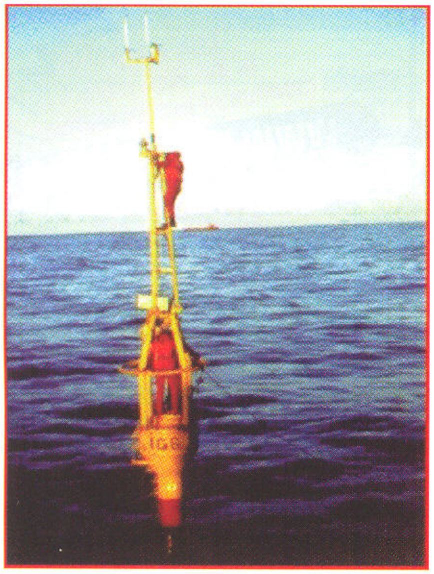
Video conferencing has traditionally used the now mundane ISDN (Integrated Services Digital Network). With 56k modems readily available in many of the newer Windows CE devices, there is now little advantage in using the more expensive, and only slightly faster 64k ISDN lines. In addition, working practices have changed and the idea of groups of people congregating in rooms at multiple locations for video conferencing now seems overly complicated and wasteful. Once again, solutions using Windows CE H/PCs connected to VGA monitors and digital cameras, and marketed through traditional video conferencing routes, have taken off.

Image processing, the intense manipulation of still and moving images through the adoption of complex algorithms such as neural networks, wavelet compression, and fractal transforms, have to date been reserved for erudite and niche applications. This is a difficult task requiring a great deal of processing power, which can now be done on small, inexpensive Handheld PCs. This combination has been readily adopted to observe shoppers' behavior in retail environments, gathering shopping mall statistics, count footfall over retail business' doorways, etc. This system uses small CE devices linked to cameras to capture, count traffic and transmits the data through normal RF (as opposed to GSM) methods to a sentinel monitoring station. This can be used for a myriad of applications including conformance to fire regulations in night clubs and entertainment centers, selling space in shopping malls, safety of sports stadiums, retail demographics, etc. At a cost of less than $1000 per door this is a very effective solution.

Surveillance systems for the domestic environment and night workers (social workers, outreach workers, etc) have also been developed. You can get a small 6" dome camera for around $500, which simply plugs into your telephone socket. You switch it on as you leave - like an answering machine and from anywhere in the world you can connect through your CE device which is attached to your mobile phone via the IrDA or by wire, and actually see what's going on at home. I have done this myself from Belgium and France back to my home in London.

Image clarity vs. frame rates

Different applications have different frame rate requirements. For example, security applications are sometimes used for crime verification or evidence in a prosecution. The quality of the pictures is important. But faster frame rates require higher data compression, and this can cause artifacts to appear in the picture, making it less useful in security applications. Here, frames rate slower than one per second will suffice as long as the quality of the picture is good. The requirement for clarity of picture over refresh rate is the same in the domestic environment where customers would rather see the details about their home



Screen 3: One current application involves the combination of CE devices and thermal cameras mounted on oil buoys and linked to shore via a wireless network. The Windows CE device processes the image from the thermal camera and sends information to monitoring stations via wireless.

from anywhere else in the world.

The combination of a digital camera and an ultra-portable color-screen handheld is impressive. It provides considerable processing power at the camera and reception ends, and enables some significant and complex tasks to be tackled in a small footprint. One current application involves the combination of CE devices and thermal cameras mounted on oil buoys and linked to shore via a wireless network (see Screen 3). The Windows CE device processes the image from the thermal camera and detects and identifies passing ships, day or night, by their thermal characteristics. More significantly it can identify whether oil is being flushed out of holds of oil tankers (an illegal activity). The Windows CE device relays the coordinates of the spill, along with the picture and the tracking of the event, back to the authorities via traditional methods. Although highly specialized, this kind of application displays the advantage a CE system has: low cost, small footprint, respectable processing power, and reliable. This combination cannot be matched by any other mechanism other than CE.

The future of mobile video and Windows CE

Microsoft will release their Media Player on the CE platform in October 1999 and a great number of multimedia applications are being prepared with this in mind. For example, multimedia language tuition software is often used for teaching languages in schools and as an aid to the travelling businessman or tourist. This type of software is usually available on CD-ROM for desktop PCs and cassette tapes for audio tape players. Versions are being developed to play on Palm-size PCs. The recent release of MP3 gives the Casio E-105 and other Palm-size PCs full multimedia capabilities. It is clear that Microsoft and other developers are behind the video/CE/GSM integration.

I believe that video, possibly with an audio channel, will be the most significant single application to run on CE devices in the future. If there was ever a "killer application" for Windows CE, this is it. Mobile video and Windows CE appear to be a match made in Microsoft heaven, and may become the de facto standard for the next millenium. ■

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Products

Live Links to the Web sites mentioned in this section!
www.hpcmag.com
A Great Home Page For Users Of Windows CE!

The PC Companion Products listed here include hardware, software, publications, events, and developer services for Windows CE. Information about the H/PCs and Palm-size PCs themselves can be found in our "At A Glance" section on page 38. Prices listed are suggested retail price. Many software products are available for online downloading. Listings do not represent an endorsement by the editors. We have tried to include a comprehensive collection of products and services available by mid-July 1999. However, there will be gaps due to information not arriving by our printing deadline. If you have a product to announce in our next issue, please send an e-mail message to editor@thaddeus.com. For live links to the Web sites mentioned in this section, visit our Web site at www.hpcmag.com.

Hardware

Auto PC

Odyssey Navigation Engine

A set of software modules that will be marketed to original equipment manufacturers (OEMs) of automotive electronics who are creating in-vehicle computing systems. Odyssey Navigation Engine provides key features such as positioning the vehicle using GPS satellite and dead-reckoning sensors, displaying 2D and 3-D map views, calculating the route, and issuing voice guidance to the driver. The new product allows InfoGation to deliver customized turnkey navigation solutions quickly and economically.

InfoGation can combine a custom user interface with the navigation solution, allowing each OEM to create differentiated products with a unique look and feel. The OEM can incorporate selected navigation features into a product design that includes the OEM's choice of hardware elements for vehicle positioning and communications functions. The Odyssey Navigation Engine supports the open Auto PC platform powered by the Microsoft (NASDAQ: MSFT) Windows CE operating system.

$ Varies; InfoGation; www.infogation.com
619-535-9870; Fax: 619-535-9871
E-mail: Info@infogation.com

Accessories

CM220 Universal Car Mount for Palm-size computers

The CM220 is designed to mount a palm-sized computer or organizer in a vehicle or other location. It includes an easily accessible ink pen/stylus, onboard compartment to hold a note pad or extra batteries. CM220 has a triple suction windshield mount or an optional adhesive mount included for mounting to hard surfaces such as a car console or computer monitor.

$49.95; ARKON Resources INC; www.arkon.com
626-358-1133; Fax: 626-303-615; Use with: Ps/PC

Developers

OmniMeter Instrumentation Products

A line of personal instrumentation products from DVP Inc., for developers and manufacturers of handheld data collection devices, mobile communications, and measurement instruments. DVP uses the services of Annasoft Systems (www.annasoft.com) to provide Windows CE-related system integration services to developers utilizing the OmniMeter platform for their handheld and portable test instruments.

The OmniMeter has a modular hardware and software architecture that offers a flexible cost/performance trade-off to the system designer, who can select from many options. In addition to the handheld version, the OmniMeter comes in a benchtop version and as a development platform, allowing developers to rapidly create custom configurations. The OmniMeter family of products helps developers create custom instruments quickly and efficiently. OmniMeter accepts multiple application cartridges, allowing the creation of "instrumentation-on-demand," where instrument functionality can be changed simply by inserting a new card. For those customers desiring custom modifications, Annasoft Systems can rapidly create custom configurations, both in hardware modifications and software design.

$varies; DVP, IncContact; www.dvpinc.com
301-670-9282; info@dvpinc.com

Peripherals

Unimicro Pocket-Sized Modem

A small, external 56K V.90 modem designed to work with Windows CE Handheld and Palm-size PCs, as well as 3Com's PalmPilot, Notebooks and Desktops PCs. Unimicro is less than ½ the size of a Palm-size PC (2.9 x 2.1 x 0.7 inches) and weighs just under 3 ounces, including a pair of AAA batteries. Unimicro comes with a standard serial port and connects to a PC Companion via the serial cable that comes

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with each Windows CE device. This frees up CF and PC Card slots on the PC Companions. Unimicro is powered by its own batteries and does not drain a PC Companion's internal batteries.

$129; Trogon Computer Corporation;
www.trogoncomputer.com; Use with: any PC Companion

Software

Calculator

Dyna Metric

A metric conversion tool for Windows CE. It provides a calculation conversion interface allowing you to convert many units from a variety of sources. A setup utility that helps in configuring the units for convention of the selected source has been included. The user can select the different sources. The application has been developed keeping in mind the directives of conversion between one unit and another. Perfect for engineering students.

Shareware $5.00; www.palmix.itil.com
Use with: H/PC and H/PC Pro
Demo at www.cemonster.com

Euro Calculator

O/S Compatibility: 2.0+. With the creation of European Union the currency calculations for globetrotters were made easy. EuroCalculator offers the convenience of two-way currency calculations with the ease of a number pad. At a time, the currencies of any five out of eleven member nations are listed for convenience and can be compared against each other and their Euro value accurately.

Shareware $3.00; www.palmix.itil.com
Use with: H/PC Pro; Demo at www.cemonster.com

Loan Calculator

O/S Compatibility: 2.11+. Calculate the loan principal when you enter in the interest rate, the term in years and the loan payment. Calculate the loan payment when you enter in the interest rate, the term in years and the loan principal.

Freeware; Use with: Ps/PC
Demo at www.cemonster.com

racePro

racePro allows you to time multiple cars, motorcycles, boats, karts, horses, or any moving object and calculate measurements of the racers' pace using Windows CE-based Handheld, Handheld Pro and Palm-size PCs

Shareware $34.95; www.cam.com
Use with: H/PC and Ps/PC; Demo at www.cemonster.com

Communications

Low Power Soft Modem

GlobalPulse offers a solution for European GSM data communications. Send and receive data, fax, and email, or access the internet using a simple serial connection cable.

$83; TDK Systems; www.tdksys.com
sales@tdksys.com; Use with: HP, Everex, LG, Casio

Telnet Force v2.0

A telnet client for Windows CE with VT-100 emulation support. You can connect to a remote system and carry out various operations like checking mail messages, transferring files or talking to another person. Telnet Force v2.0 now lets you set the text width and height separately for optimum viewing. Other new features include configurable Function Key support, Auto Dial for establishing your Internet connection, improved server capabilities negotiation and better VT-100 emulation.

$35; Ruksun Software Technologies, Ltd.
www.ruksun.com/wince; +91 212 678286 or
+91 212 678288; Fax: +91 212 678866;
info@ruksun.com; Use with: H/PC & H/PC Pro (all processors); Demo available

Database

ADPI's Data Acquisition Software

Used for acquiring, storing, displaying and analyzing data in a graphical interface. Easi Daq Software will acquire data from one to 16 channels and display the data in a real time mode. Sampling rate of up to 1K per second is attained. Data can be directly imported into Excel and other Windows applications. Input options include RS-232, PCMCIA, Data Acquisition cards, USB and other devices. Sensors support includes Thermocouples, Strain Gauges, Load Cells, Thermisters and 0-20 mA current.

$199 to $399; Analog & Digital Peripherals, Inc (ADPI)
www.adpi.com; 937-339-2241; Fax: 937-339-0070
info@adpi.com; Use with: H/PCs

Oracle8i Lite

A single-user, 50KB-750KB footprint, object relational database specifically designed for mobile computing applications requiring seamless synchronization with central databases. Supporting a wide range of operating systems including Windows 95/98/NT, Windows CE, Palm OS, EPOC 32 and Chorus. Oracle8i Lite is optimized for use on small mobile application devices, such as laptops, handheld computers and personal digital assistants(PDAs).

$na; Oracle; www.oracle.com
650-506-7000; Use with: H/PC, Ps/PC and H/PC Pro

Developer

Dialect Standard

An extensible, general purpose programming language that includes an integrated development environment with debugging support. There is built-in support for file-

State Street Direct
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Online Gift Certificate (www.StateStreetDirect.com/free25)
Palmtop PC's, Audio & Video Products, Digital Photography, Computers & More!
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handling, regular expressions, sockets, GUI, etc. Native data structures include strings, arrays, frames (a.k.a. hash-tables), object-oriented classes, and more. Another benefit of Dialect is that it was designed in parallel with Dialect for Windows CE, so code is cross-platform, byte-code compatible.

Freeware; Aristar, Inc.; www.aristar.com
Use with: H/PC, Ps/PC; Demo at www.cemonster.com

dsFORTH

A Forth programming language compiler for Windows CE. The translator itself runs on Windows 95/98/NT, and the resulting code (EXE) can be executed on the Palm-size PC. This file (70 kb) includes dsForth and the examples.

Freeware; DeloSoft; www.delosoft.com
Demo at www.cemonster.com

EZSetup

Takes your .CAB files and outputs a compressed, self-contained, self-extracting Windows setup program that will setup your Windows CE software. The result is a single executable that will set up your WinCE app simply by clicking on the download link! You provide EZSetup with a readme.TXT file, a eula.TXT file (end-user license agreement), and your .INI and .CABs, and it'll output a setup program ready to be used. Supports ALL units running CE 2.0 and later.

Freeware; Scott's Software;
www.eskimo.com/~scottlu/win/index.html
Demo at www.cemonster.com

Nuance

A powerful, extensible multiple-file text editor for H/PC Pro devices designed for programmers and power users.

Freeware; www.cs.nwu.edu/groups/windowsce/nuance
Use with: H/PC Pro; Demo at www.cemonster.com

Pocket Scheme

Programming language that supports file creation and manipulation, regular expression operations on character strings, and TCP/IP networking. The package includes a small parenthesis-balancing text editor, and (on the H/PC) a grep utility itself written in Pocket Scheme.

Freeware; Angry Graycat Designs;
www.angrygraycat.com; Use with: H/PC, Ps/PC
Demo at www.cemonster.com

Finance

PocketExpense

A freeware expense tracking program for HPCs running WinCE 1.0 or greater. Allows one to enter/edit expense records. If you install the applet and datafile (40k) into your synch directories, the expense data file can be used with MS Excel or Access to create expense reports from the desktop. (An Excel 97 example expense report is included). Note: Requires PocketC

Freeware; www.home.mpinet.com
Use with: H/PC, H/PC Pro; Demo at www.cemonster.com

TimeTTracker

A time and expense tracking application for Windows CE Palm-size PCs and Handheld PCs. It has been designed for consultants and other people who need to track their clients, projects and time. TTT features various data display methods (list, tree), custom time entry dialogs for fast entry, persistent lookup pulldowns, data search/summarization functionality, and much more.

Freeware; www.members.xoom.com
Use with: H/PC, Ps/PC; Demo at www.cemonster.com

Games/Entertainment

Logic Symbols

Find the hidden places and symbols in four boxes. These symbols are shown in a list and you have only six tries to find out the true places. After that the solution is displayed. Using the appropriate palm pen you select the symbols from the list and/or from preceding boxes. One click on the vertical button will display the presence of the symbol in its correct place (the black bowls).

Shareware $7.00; AlfaBit Software, Ltd.; www.alfabit.net
Use with: Ps/PC; Demo at www.cemonster.com

Martians!

Like in Space Invaders and Gorf, you have to kill the aliens before they kill you. As they shoot at you, your shields deteriorate until their lasers can finally hit you. Each level gets harder as the aliens shoot more lasers and also shoot more often, but you won't be able to even finish the first level until you register. Now it supports color!

$10; Xoanan Industries; www.xoanan.com
Use with: H/PC, Ps/PC, H/PC Pro

Memory Blocks

Memory Blocks is easy to use and you can play this game with a Palm-size PC pen. You must turn around the pieces and find

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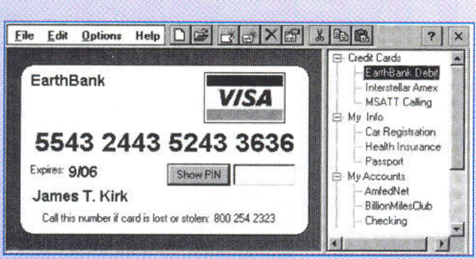

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PLUS: Recordian, eSportsCard, game packages and more. Visit our website for handheld, palm-size and desktop software.

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out the pairs with the identical symbols. If these pairs are in succession form they will disappear from the screen. The time and turn number are important to make a good score.

Shareware $7.00; AlfaBit Software, Ltd.; www.alfabit.net
support@alfabit.net; Use with: Ps/PC
Demo at www.cemonster.com

Mosaic

Based on the old game of joining four lines to make a box, and earn points.

$5.00; www.palmix.itil.com; Demo at www.cemonster.com

N.U.M.

An original game in the spirit of Reversi and Minesweeper.

Freeware; WebGem; www.webgem.com
Demo at www.cemonster.com

Plane Qbe

A simple Rubick Cube-type game.

Shareware $7.00; AlfaBit Software, Ltd.; www.alfabit.net
support@alfabit.net; Use with: Ps/PC
Demo at www.cemonster.com

InfoManagers

BalanceBook

Track your personal or business expenses, calculate account balance and enter future repeating expenses - with a specified interval in months - which are updated automatically on the appropriate date. You can also export files to a *.TXT format, these files can consequently be imported into Microsoft Excel for printing or further processing. Graphing function gives you an excellent overview of your past balance and expenditures.

$11.95; Portable Projects; www.portableprojects.com
info@portableprojects.com; Use with: Ps/PC
Demo at www.cemonster.com

DNote

An electronic notepad program that lets you take and organize notes anytime and anyplace. DNote lets you take graphical notes; textual notes; bulleted lists and checklists. You can encode your notes so secret drawings, passwords and pin numbers stay secret. Categories let you organize your notes and find what you need. DNote includes IR support, so you can beam your notes to colleagues.

Shareware $29.00; Derago; www.derago.com
+49(7745)9208-0 (Germany);
Fax: +49(7745)9208-17; support@derago.com
Use with: Ps/PC; Demo at www.cemonster.com

Friend Indeed

Store and monitor personal information like Blood Pressure, Blood Sugar, Pulse Rate, Vehicle Mileage, etc. and further analyze them over a period of time. For easier analysis, Friend Indeed provides a graphical representation of the stored information with zooming facility. Additionally, Friend Indeed facilitates you to set alarms for the appointments with multiple doctors, taking medicines, service of vehicles and much more.

Shareware $10.00; www.palmix.itil.com
Use with: H/PC and Ps/PC; Demo at
www.cemonster.com

HPC Notes 3.0 Lite Edition

Latest upgrade of a popular notes organizer that lets you create notes and provide them with type, subject, creation and modification date, which helps to find required information quickly and easily. With HPC Notes, you can search for specific text in a specific field and sort notes by type, date or subject. You can protect notes from unauthorized access with a password and send e-mail messages directly from the Note Editor. Interface to the Contacts Database enables you to pick an e-mail address instead of typing it in. HPC Notes uses a compressed database, saving limited storage space.

$19.95 (FREE upgrade); PhatWare Corp.;
www.phatware.com; 650-299-0110; Fax: 650-299-1369
info@phatware.com; Use with: H/PC, PsPC, and H/PC
Pro (CE 2.0+, all processors); Demo at
www.cemonster.com

IntelliGOLF Par/CE Edition

Automate golf scoring on all Palm-size PCs, capturing game improving statistics , and tracking wagers using any of the 17 included sidegames (e.g. Skins). IntelliGolf's Birdie edition lets you capture, review and analyze historical game trends on your PC, calculate your approximate handicap and download courses from the Internet. The Birdie edition includes all of the Par's features plus Windows 95/98/NT-based desktop software and it's only $10 more.

$29.95; IntelliGolf; www.intelligolf.com
info@intelligolf.com; Use with: Ps/PC
Demo at www.cemonster.com

The Safe

An application for maintaining serial numbers, online passwords, credit card PINs and other things. All the data can be protected by real encryption - not just password protecting the program itself.

$19.00; Softwarebüro Müller; www.sbm.nu
+49 (371) 363079 (Germany); Fax: +49 (371) 363081;
info@sbm.nu; Use with: H/PC, Ps/PC
Demo at www.cemonster.com

Internet

bMOBILE Chat

bMOBILE Chat offers live IRC interaction with anyone, anywhere, anytime from your Handheld PC. Gain access to any chat channel around the world, even private and secret channels.

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888-820-4500 or 425-519-5900; sales@bsquare.com
Use with: H/PC, Ps/PC and H/PC Pro
Demo at www.cemonster.com

Connect Force

An Internet Connection Wizard that allows users to easily setup and configure an Internet Connection icon on their mobile device. Connect Force takes the user through a set of simple dialogs, collects all the required information and then creates a pre-configured Connection icon on the mobile device's desktop.

Shareware $15.00; Ruksun Software Technologies
www.ruksun.com; 91-212-678286 or 91-212-678288;
Fax: 91-212-627264; info@ruksun.com
Use with: H/PC and H/PC Pro
Demo at www.cemonster.com

PalmBrowser

New version includes features such as bookmarks, navigation, fullscreen mode, widescreen mode, caching, proxy support, image preferences, URL helpers, color support, SH3 support, status bar, enhanced interface, as well as increased stability and more efficient downloading.

Shareware $24.95; Conduits; www.conduits.com/ce
patters@conduits.com; Use with: Ps/PC
Demo at www.cemonster.com

Reference

GKinPocket

A mini-encyclopedia with information about countries, books and authors, inventions, world records, and more.

Freeware; www.palmix.itil.com
Use with: H/PC Pro
Demo at www.cemonster.com

KingKanji

A Japanese character/word flashcard system for the Windows CE devices. Lessons can easily be created using a Japanese word processor. KingKanji is highly customizable and tests users in Japanese or English. Lesson items can be composed of a single character, multi-character phrases, and sentences. What makes KingKanji unique is its emphasis on writing via Windows CE's stylus input.

$24.95; Gakusoft; www.geocities.com/~mramsey99
Use with: H/PC, Ps/PC; Demo at www.cemonster.com

PalmFlash

A standalone player that allows playback of Macromedia Shockwave Flash 3 files (*.SWF) on your Palm-size PC. It utilizes a port of Oliver Debon's Linux-based flash library.

Freeware; Conduits; www.conduits.com/ce
patters@conduits.com; Use with: Ps/PC
Demo at www.cemonster.com

Pocket Dictionary

A 20,400 word US dictionary that provides full dictionary definitions including parts of speech (noun, verb, adjective, adverb). The dictionary can also be used to spell check words or to refine your use of a word such that a similar word can be looked up in the dictionary. (Does not work with the Vadem Clio/Sharp Tripad or the HP Jornada 800.)

$32; Surerange Analysis Ltd.; www.surerange.com
info@surerange.com; Use with: H/PC & Ps/PC (CE 2.0 & above); Demo at www.cemonster.com

TourMate

Language phrase translation dictionary available in English-to-Japanese, English-to-German, or English-to-Hindi versions. The dictionary is categorized into Greetings/-Pleasantries, Inquiries, Food/Restaurants, Emergency, and Miscellaneous.

Shareware $10.00; www.palmix.itil.com
Use with: H/PC Pro; Demo at www.cemonster.com

wmTimesUp!

A sophisticated count-down multi-timer lets you count down up to 4 events at once. Comes with a large digital display of timer and the option to synchronize the timers. Alarms feature lets you choose Sound, Led, Vibrate (on supported devices). Include a spoken count-down option, color support, quick-help on setup.

Shareware $15.00; Whittaker Moore Associates
www.whittakermoore.com;
enquiries@whittakermoore.com; Use with: Ps/PC
Demo at www.cemonster.com

Synchronization

Data Bridge

Data Bridge facilitates transfer of any database created on Windows CE environment and resident on your Handheld PC to a text file on your desktop computer and vice-versa. This text file can easily be converted into Excel, Access or any other database file of your choice. It also allows you to quickly and easily exchange information with the facility of removing unwanted databases with the database viewer.

Shareware $5.00; www.palmix.itil.com
Use with H/PC; Demo at www.cemonster.com

Utilities

ArtSMark

A utility that lets you bookmark at frequently accessed or used application windows. You can use the bookmark to quickly go back to any location in any application without a long series of pen or key strokes.

Shareware $25.00; ArtSoft; www.artsoft.ru
+7 095 362-7213 (Russia); info@artsoft.ru
Use with: Ps/PC; Demo at www.cemonster.com

DState

Find out how much free program and storage memory is left on your PC Companion, as well as track the power left in your power source(s).

Freeware; www.dcollections.com
Use with: H/PC & Ps/PC

System Info

Check the current system status of your PC Companion. An icon is placed in the system tray while System Info is running. This icon represents the status of your batteries. If you are plugged into power, an AC icon will appear. While running on batteries a battery is displayed. The battery contains bars representing 0-100 percent battery power remaining.

Shareware $10.00; Emerald Technology Inc.
www.emeraldtechnologyinc.com; 800-427-2770
Support@EmeraldTechnologyInc.com
Use with: H/PC, Ps/PC and H/PC Pro
Demo at www.cemonster.com

Services

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My Docs Online!

A free Web-based service for storing documents and files on the Internet. Users can establish a free account in under 30 seconds and receive 20 megabytes of storage space for any type of file including word processing documents, spreadsheets, presentations, GIFs, JPGs, and MP3s. Users can upload and store their important business and personal files and then access them from an H/PC or any Web-enabled PC anywhere in the world. Any type of file can be saved on the Web, moved from one PC or Mac to another, shared with co-workers or friends, or downloaded to remote locations.

Freeware; My Docs Online!; www.mydocsonline.com
888-686-1181

Training

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Advanced Systems Services Programming for Microsoft Windows CE

September 13 — September 17, 1999

Each workshop is five days long and is held in Bellevue, WA. The workshops focus on classroom sessions and hands-on-labs.
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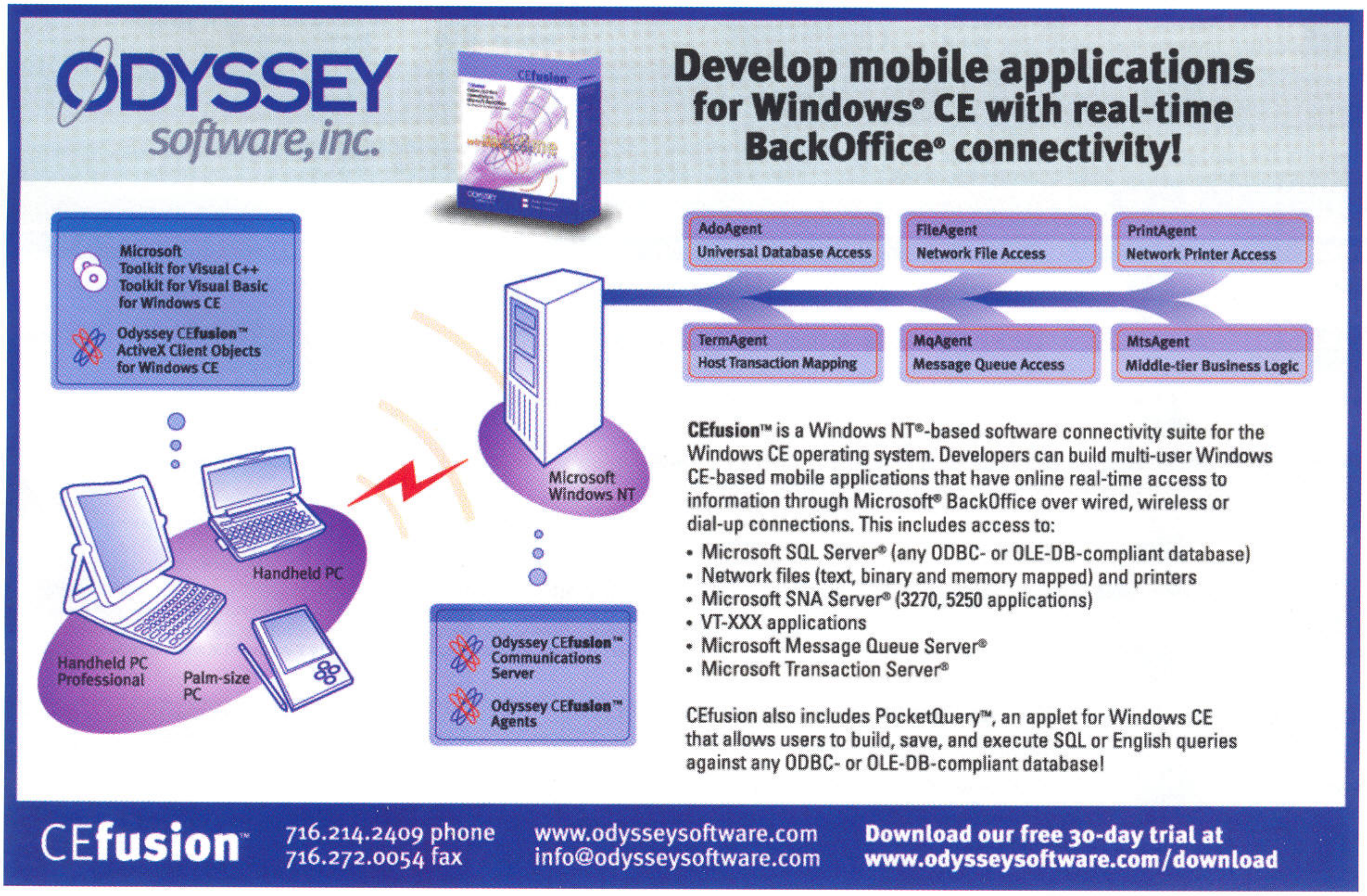
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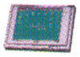
PC Companions

Handheld PC Pros

Windows CE 2.1 operating system and Handheld PC Pro Edition built-in applications. All units have backlighting, PC and CF slots, serial and IrDA ports.

PC COMPANION		PRICE	DISPLAY (C=COLOR)	CPU	RAM/ROM (MB)	BATTERY	SIZE(IN)/WT(LB)	WEB CONTACT	COMMENTS
Compaq Aero 8000		$949	10", 800x600, 256c	128 MHz 64-bitSH4	16 (exp 64)/16	L-Ion/ 7hr	10.75x8.5x1/2.95#	www.compaq.com	TouchPad instead of touchscreen, SmartCard slot, 56K modem, optional 13 hr battery
HP Jornada 820		999	8.2", 640x480, 256c	190 MHz ARM	16 (exp 32)/16	L-Ion/ 8hr	10x7x1/2.5#	www.hp.com/jornada	TouchPad instead of touchscreen, 56k modem, USB port, 90% keyboard, optional 15hr battery
HP Jornada 680 & 680E		899	6.5", 640x240, 256c	133 MHz SH3	16(exp 32)/16	L-Ion/ 7hr	7.4x3.7x1.3/1.1#	www.hp.com/jornada	Pocketable 1/2 VGA screen, 56K modem, good add-on software, optional 21hr battery
Hitachi HPW-600 ET		899	7.5", 640x480, 65Kc	128MHz, SH4	16(exp 32)/16	L-Ion/na	8.7x1.2x6.3/1.6#	www.hitachi.co.jp/Prod/hpw/	Vertical market tablet: no keyboard
IBM WorkPad z50		999	8.2", 640x480, 64K c	131MHz MIPS	16 (exp 48)/20	L-Ion/8hr	8x10.2x1/2.7#	www.pc.ibm.com	TrackPoint instead of touchscreen, 33.6K modem, optional 16hr battery & stereo headphones
Itronix T-5200		varies	7.3", 640x240, mono	74 MHz MIPS	16/16	L-Ion/na	na/na	www.itronix.com	Vertical market, Ruggedized, 1/2 VGA screen, 33.6K modem
NEC MobilePro 800		990	9.4", 800x600, 64K c	131MHz, MIPS	32/24	L-Ion/8hr	9.6x7.5x1/2.5#	www.neccsd.com/	USB port, mono headset jack, 56K modem
NEC MobilePro 770		790	8.1", 640x240, 65K c	131MHz, MIPS	32 (exp 48)/ 24	L-Ion/10hr	9.6x5.2x1.1/1.7#	www.neccsd.com/	1/2 VGA screen, 56K modem, Audio jack
Samsung IZZI Pro		est 850	8.2", 640x480, 256c	148MHz MIPS	16 (exp48)/16	L-Ion/10+hr	8.94x7.76x1.1/2.2#	www.samsung.com	TouchPad instead of touchscreen, 56K modem, not available in the U.S.
Sharp Mobilon TriPad		999	9.4", 640x480, 256c	90MHz MIPS	16 (exp32)/24	L-Ion/12hr	11.25x8.75x1/3.2#	www.sharp-usa.com	Sleek design, 3-position hinged display, 33.6K modem
Sharp Mobilon Pro		899	8.2" 640x480, 4K c	129HMz MIPS	16/16	L-Ion/8hr	9.3x7.7x1.1/2.7#	www.sharp-usa.com	33.6K modem, optional digital camera card
Vadem Clio		999	9.4", 640x480, 256c	90MHz MIPS	16 (exp32)/24	L-Ion/ 12hr	11.25x8.75x1/3.2#	www.vadem.com	Sleek design, 3-position hinged display, 33.6K Modem
WPI Husky FeX 21		1,900	6.5", 640x240, c/m	75MHz, Toshiba	16 (exp 32)/16	NiMH/N/A hr	7.5x6.1x1.5/1.6#	www.huskyinc.com	Verticle market device, 1/2 VGA screen, color & monochrome — 16/32 MB versions

Handheld PCs

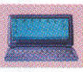
Uses Windows CE 2.0 operating system and Handheld PC edition of built-in applications. All units have PC and CF slots, serial and IrDA ports. All units have touchscreens.

PC COMPANION		PRICE	DISPLAY (C=COLOR)	CPU	RAM/ROM (MB)	BATTERY	SIZE(IN)/WT(LB)	WEB CONTACT	COMMENTS
Casio A20		$600	6.5" 640x240 mono	80MHz SH3	8/8	AA, 25hr	7.25x3.68x1/1#	www.casio-usa.com	Pocketable, monochrome screen, long battery life, optional L-Ion (40hr) battery
Compaq 810		600	5.9" 640x480 mono	75MHz MIPS	8 (exp 20)/16	NiMH/ 15hr	3.9x7.3x1.3/0.9#	www.compaq.com	Pocketable, 33.6k modem, no CF slot, can use AA batteries, optional auto power adapter
Compaq 2010c		899	5.9" 640x480, 256c	75MHz MIPS	8 (exp 32)/16	NiMH/ 4hr	3.9x .3x1.6/0.95	www.compaq.com	Same as above
Ericsson MC-16		800	640x240, mono	60MHz SH3	8/10	NiMH/	7.2x3.6x1.1/1#	www.ericsson.com	Built-in Ir modem communicates with Ericsson cell phones, hardware same as 360LX (below)
HP 360LX		600	640x240, mono	60MHz SH3	8/10	NiMH/	7.2x 3.6x1.1/1#	www.hp.com/jornada	Pocketable, No Modem, can use AA batteries
HP 620LX / 660LX		699/849	640x240, 256c	75MHz SH3	16 (exp32)/10	L-Ion/ 8hr	7.8x4.1x1.4/1.25#	www.hp.com/jornada	660 comes w 56K modem & 32mb RAM, excellent add-on software, upgradeable to H/PC Pro
Hitachi HPW-200EC		799	8.1", 640x240, 256 c	100 MHz SH3	16 (exp 32)/12	L-Ion/ 10hr	10.0x 5.2x1.3/1.8#	www.hitachi-hpc.com	1/2 VGA screen, 33.6K modem, upgradeable to H/PC Pro
LG Phenom Express		899	8.1", 640x240, 256 c	100MHz, SH3	32/16	L-Ion/ 12hr	9.3x 5.9x 1/1.8#	www.lgphenom.com	1/2 VGA screen with 56K modem, upgradeable to H/PC Pro
LG Phenom Ultra		900	8.1", 640x240, 256 c	100 MHz SH3	16 (exp 32)/12	L-Ion/ 10hr	10.0x5.2x1.3/1.8#	www.lgphenom.com	Same hardware as Hitachi HPW-200EC (above)

At A Glance!

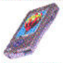
Handheld PCs

Windows CE 2.0 operating system and Handheld PC edition of built-in applications. All units have PC and CF slots, serial and IrDA ports.

PC COMPANION	PRICE	DISPLAY (C=COLOR)	CPU	RAM/ROM (MB)	BATTERY	SIZE(IN)/WT(LB)	WEB CONTACT	COMMENTS
NEC MobilePro 700/750C	$700/900	7.3" 640x240 m/c	80MHz MIPS	8 (exp 16/32)/ 16	L-Ion/ m/c 25/8hr	9.6x4.8x1.2/1.9"	www.neccsd.com	1/2 VGA screen, 700 has a monochrome screen, 750 has 256 color screen
Novatel Wireless CONTACT	1,000	7.1", 640x240 mono	80MHz SH3	8 (exp 32)/ 8	L-Ion/ 8hr	7.6x4.9x1.2/1.5"	www.novatelwireless.com	Wireless CDPD modem, 14.4K landline modem, communications software
NTS Dreamwriter IT	895	640x480 256c	80MHz SH3	16(exp 64)/16	NiMH/ 8hr	15x11x2.5/5.5"	nts.dreamwriter.com	Vertical market, notebook, no touchscreen/CF slot, 33.6 modem, LAN, VGA ports, 1.44"" floppy disc
Philips Velo 500 	550	6.2" 640x240 mono	75 MHz MIPS	16 (exp 24)/ 16	NiMH/ 15hr	6.8x3.8x1.3/0.9	velo.philips.com	28.8 modem, Mini-card DRAM slot, no CF slot, optional Vmodule - PC Card slot, accepts AA batteries
Sharp Mobilon HC-4500/4600	700	6.5" 640x240 256c	74MHz MIPS	16 (exp32)/ 16	NiMH/ 6hr	7.3x3.7x1.2/1.1"	www.sharp-usa.com	33.6 modem, optional digital camera card
Sharp Mobilon HC-4100	500	6.5" 640x240 mono	74MHz MIPS	12 (exp 16)/ 16	AA/ 20hr	7.3x3.7x1.2/0.8"	www.sharp-usa.com	33.6 modem, optional digital camera card, optional NiMH battery /35hr

Palm-size PCs

Windows CE 2.0 or 2.1 operating system and Palm-size PC edition of Pocket Outlook, Note Taker, Mobile Channels and other built-in applications. All units have CF slots, serial and IrDA ports, and touchscreens. Color-screen Ps/PCs use CE 2.1.

PC COMPANION	PRICE	DISPLAY (C=COLOR)	CPU	RAM/ROM (MB)	BATTERY	SIZE(IN)/WT(LB)	WEB CONTACT	COMMENTS
bCOM Mars	$379	320x240 mono	75MHz MIPS	4(exp 8)/8-16	2 AA	5.4x 3.4x 0.8/8	www.bcom.com.tw	Built-in 28.8 kbps modem, limited U.S. availability
Casio E-10/11	399	320x240 mono	100MHZ, VR411	8 / 8	2 AAAs	4.9x 3.2x .72/6.6	www.casiohpc.com	Optional rechargeable battery pack; well-positioned buttons
Casio E-100 105	499	320x240, 64Kc	131Mhz MIPS	16 or 32 / 32	L-ion/ 10hr	3.3x 5.2x .80/8.9	www.casiohpc.com	Nice color-screen, built-in MP3 &MPEG player; stereo headphone jacks
Compaq Aero 2100	449-499	320x240, 256c	70 MHz MIPS	8 or 16/ 8	L-ion/ 10hr	5.3x 3.3x .78/11	www.compaq.com	Excellent outdoor screen; ships with Audible player; Japanese language version available
Everex Freestyle 	269 to 449	320x240 mono	66 Mhz MIPS	4,8,or16/ 8 (Asc 54 Mhz)	2 AAAs or NiMH/ 20hr	4.8x 3.2x .64/5.29	freestyle.everex.com	Modem built into Exec cradle, 4Mb RAM upgrade module; Chinese ""Leo"" version
Everex Freestyle 540	500	320x240 256c	78 MHz MIPS	N/A	L-ion/ na	na/na	freestyle.everex.com	Everex has announced this, but not shipped as of 7/14/99
HP Jornada 420	519	320x240 256c	100 MHz SH	8 /8	L-ion/ 6hr	5.1x 3.2x .9/8.8	www.hp.com/jornada	Supports FLEX CF paging and modem cards
LG Pocket Phenom	na	320x240 mono	SH3	8 / 8	AAA/ na	na/na	www.lgphenom.com/	LG isn't selling this to end users and we don't have much information about it
Palmax PD-300	299	320x240 mono	60 Mhz SH3	2 (exp 10)/ 8	AAA/ na	4.9x 3.2x .8/6.5	www.palmax.com.tw	No comments
Philips Nino 200/300	400, 500	320x240 mono	75 MHz MIPS	4 or 8 / 8	NiMH or AA/ 12hr	5.3x 3.4x .8/7.3	nino.philips.com	Optional clip-on modem, well styled, largest Ps/PC
Philips Nino 510	449	N/A	75 MHz MIPS	16/ na	NiMH orr AA/ 8h	3.4x 5.3x .75/8	nino.philips.com	Well-styled, optional 19.2 kbps clip-on modem, good set of add-on software
Samsung InfoGear	na	340x240 mono	75 MHz MIPS	2 (exp 8) / 4	AA/ na	5.1x 3.4x .9/na	www.samsung.com/	Not marketed in the U.S.
Trogon Palm Power	215	320x240 mono	54 Mhz MIPS	4,8,16 / 4	NiMH or AAA/ 20hr	4.8x 3.2x .64/5.3	www.trogoncomputer.com	Looks like the same hardware as the Everex
Uniden	379	320x240 mono	75 MHz MIPS	4 or 8 / 8	AA/ 15hr	5.5x 3.4x .74/na	www.uniden.com/	Built-in 28.8 kbps modem

Quick Tips
& PC Companion Tricks

by Jim Christian

Associate Editor, Handheld PC Magazine*; Sysop, CompuServe's Windows CE Forum; Associate Forum manager, MSN's Windows CE forum.*

Here is the second installment of Jim Christian's 100-tip blow out!

1. Need more than a spell checker? Check out this cool dictionary

Pocket Dictionary provides full dictionary definitions for 20,400 words (U.S.), and can also be used to spell check words. It's large, occupying 6.2 MB, so I recommend that you install it to a CF card. It's available in H/PC and Ps/PC versions (see Screens 1 & 2) and you can download a demo version, or purchase it for $32 at www.surerange.com/dictionary.html.

2. You don't need a news reader with DEJA.COM

Deja.com is a free Web site with discussion groups, communities, and product rating sections. Sign up and get a free e-mail account. If you're looking for information about products and services, to meet new people and get advice, and even to buy new and used wares, you've just found it. Deja News is at www.deja.com. Add it as one of your Pocket Explorer Favorites.

3. Support for non-English alphabets

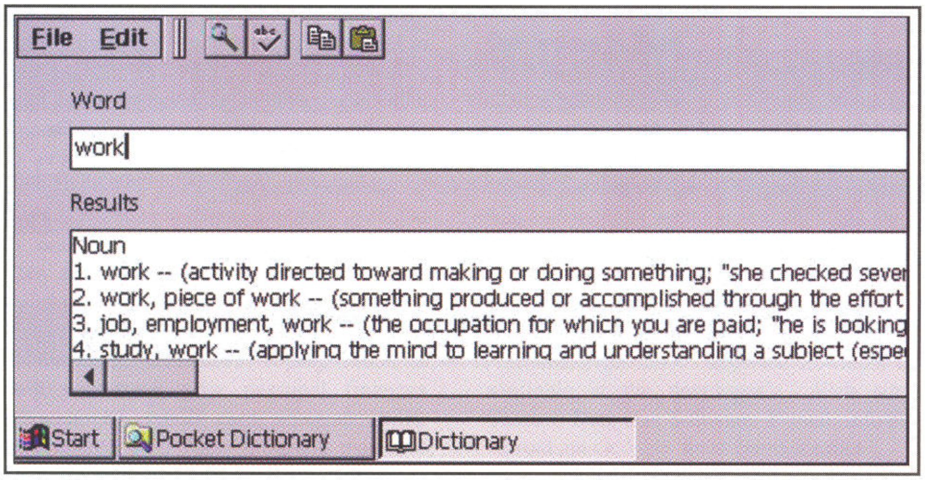
English-language H/PCs have limited ability to create non-English characters. But KeyMap Pro from Jimmy Software (www.jimmy.com/utility.html) fixes this. It includes (1) Multiple Language Keyboard Layouts supporting 56 languages, (2) a Character Map Table, (3) a Text Macro w/definable font information and definable HotKeys, (4) Sticky Shift, (5) Combination Key for easy typing of special characters, (6) a Date/Time Stamp in multiple formats, and (7) a Terminal Function Key. It's one for the best available keyboard utilities (Screen 3).

4. Fix the Jornada 680's Quicken 99 problems

HP's Jornada 680 comes with Pocket Quicken built in (not yet available for other H/PCs). Unfortunately, a bug in the desktop version of Quicken 99 means that you can't synchronize some of Pocket Quicken's data with Quicken 99. Everything syncs with the exception of the "categories." On The Go Software and Intuit are aware of this problem and working on a permanent solution.

For now, On The Go Software has provided a temporary fix for Quicken 99. It involves a change to the desktop PC Registry file. The easiest way to fix the problem is as follows:

1. Go to www.onthegosoftware.com/support/releases.htm#144.
2. Click on "Download" for the bug fix.

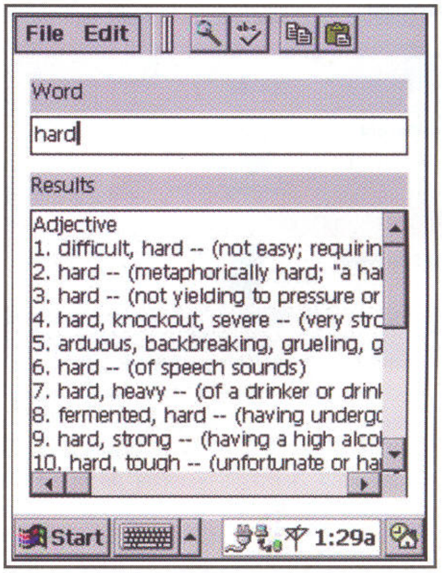


Word

work

Results

Noun
1. work -- (activity directed toward making or doing something; "she checked sever
2. work, piece of work -- (something produced or accomplished through the effort
3. job, employment, work -- (the occupation for which you are paid; "he is looking
4. study, work -- (applying the mind to learning and understanding a subject (espe



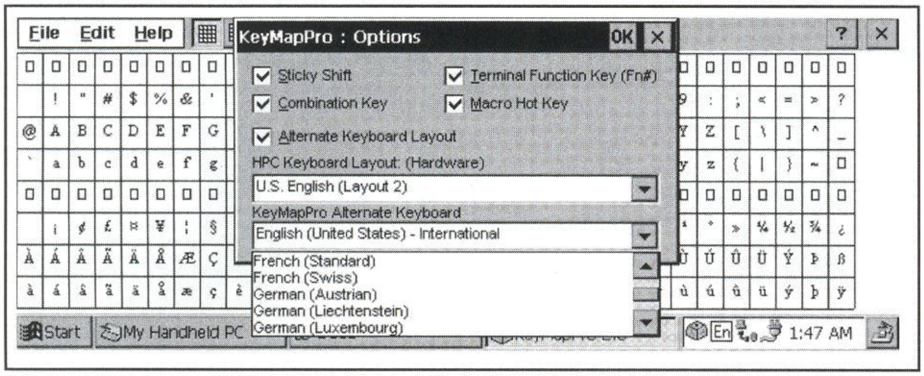
Word

hard

Results

Adjective
1. difficult, hard -- (not easy; requirin
2. hard -- (metaphorically hard; "a ha
3. hard -- (not yielding to pressure or
4. hard, knockout, severe -- (very str
5. arduous, backbreaking, grueling, g
6. hard -- (of speech sounds)
7. hard, heavy -- (of a drinker or drin
8. fermented, hard -- (having underg
9. hard, strong -- (having a high alco
10. hard, tough -- (unfortunate or ha

Screens 1 & 2: Pocket Dictionary provides full dictionary definitions for 20,400 words, can be used to spell check words, and is available for the H/PC and Ps/PC.


File
Edit
Help
KeyMapPro : Options
OK
Start
My Handheld PC
1:47 AM

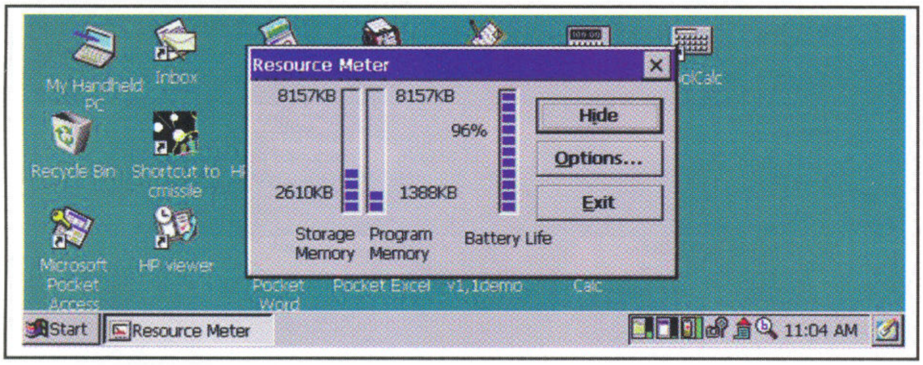
☑ Sticky Shift
☑ Terminal Function Key (Fn#)
☑ Combination Key
☑ Macro Hot Key
☑ Alternate Keyboard Layout

HPC Keyboard Layout: (Hardware)
U.S. English (Layout 2)

KeyMapPro Alternate Keyboard
English (United States) - International

French (Standard)
French (Swiss)
German (Austrian)
German (Liechtenstein)
German (Luxembourg)

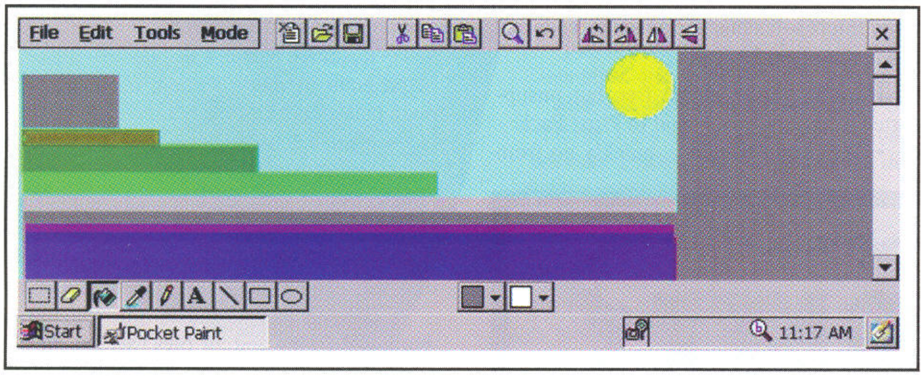
Screen 3: KeyMap Pro adds character support for 56 languages to your H/PC.


My Handheld PC
Inbox
Recycle Bin
Shortcut to crossile
Microsoft Pocket Access
HP viewer
Pocket Word
Pocket Excel
v1.1demo
Calc
Resource Meter
Hide
Options...
Exit
Start
11:04 AM

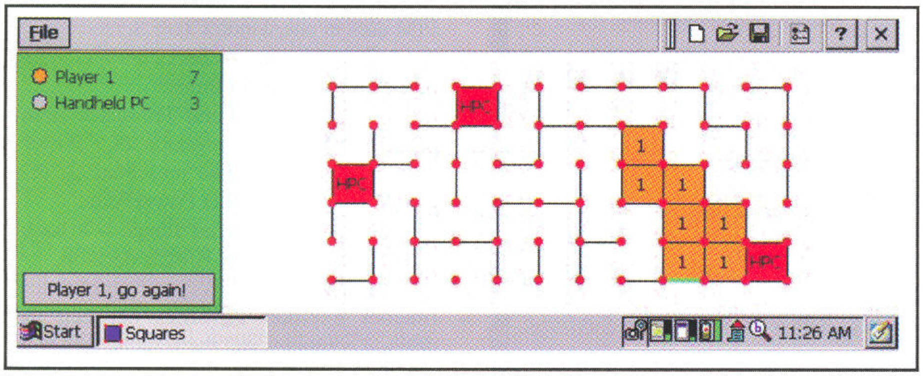
Resource Meter

Storage Memory	Program Memory	Battery Life
8157KB	8157KB	96%
2610KB	1388KB	

Screen 4: Plus! Pack's Resource Meter displays the amount of program memory, storage memory, and main battery power.


File
Edit
Tools
Mode
Start
Pocket Paint
11:17 AM

Screen 5: Plus! Pack's Pocket Paint is a pocket-size version of Microsoft Paint.


File
HPC
1
Start
Squares
11:26 AM

Player 1	7
Handheld PC	3

Player 1, go again!

Screen 6: Plus! Pack's Squares is a game of strategy.

Mobile Power Supply

Take your Sharp, HP, or Casio H/PC on the road with a PowerCon Adapter. Stop juggling battery packs, just plug into any 12V outlet. Up to 45W capacity for Mobilon Pro and HP Jornada. The PowerCon is an efficient switchmode design, not a cheap linear. High integration means small size, reliable, low cost. Available from resellers and distributors.

PV5000 .... $39
HC4X00 29
820LX 39
680LX 29
A1X 29
Other models available.

Aegis Technologies LLC
520-773-0189
www.primenet.com/aegistec
aegistec@primenet.com

3. From your desktop PC's Explorer double click on the file you just downloaded (PQRegFix.reg). This will automatically update your Registry.

4. Delete PQRegFix.reg.

If you are comfortable working with a Registry Editor, you can open up the Windows CE Registry file and add the following lines:

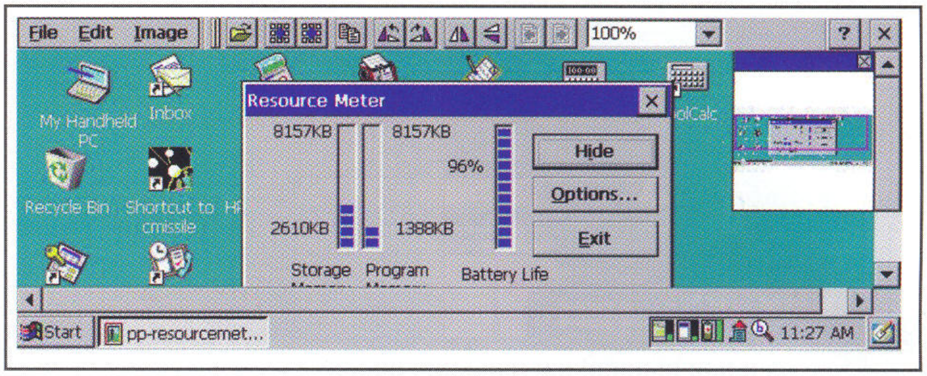
```
REGEDIT4
[HKEY_LOCAL_MACHINE\SOFTWARE\
Intuit]
[HKEY_LOCAL_MACHINE\SOFTWARE\
Intuit\Quicken]
```

You can also manually synchronize by running the QSync program in the Pocket Quicken directory.

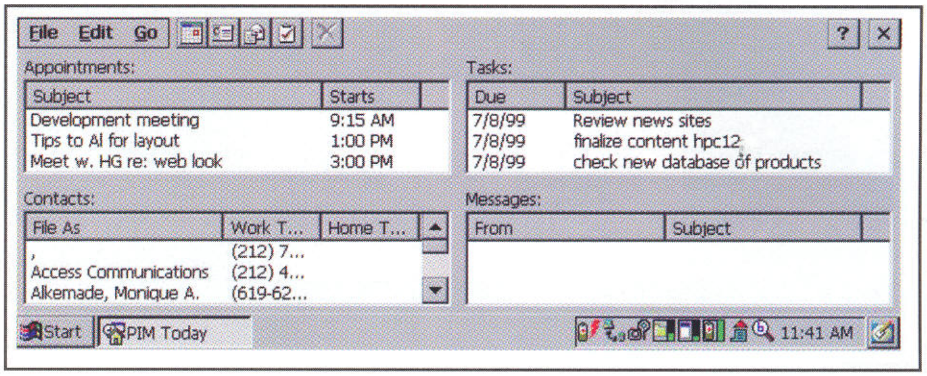
I have Quicken 98 on my desktop PC and it works perfectly with Pocket Quicken w/o any patches. I get everything synchronized automatically, including categories. It may be that Pocket Quicken was designed for Quicken 98 and to use it with Quicken 99 one will need to get that patch from the developer. If you have any questions, contact On The Go Software technical support at (800) 756-4976.

5. Plus! Pack for H/PC Pro – Free!

Want to use your H/PC Pro to write PowerPoint presentations, do spell check or view graphic files? Now do this and more for free! Go to Microsoft's Windows CE free downloads section and download Plus! Pack. (While you're there, check out Power Toys.)



Screen 7: Plus! Pack's Image Viewer displays .gif, .jpg, and most .bmp, .xbm, .png and .tif files.



Appointments:

Subject	Starts
Development meeting	9:15 AM
Tips to Al for layout	1:00 PM
Meet w. HG re: web look	3:00 PM

Tasks:

Due	Subject
7/8/99	Review news sites
7/8/99	finalize content hpc12
7/8/99	check new database of products

Contacts:

File As	Work T...	Home T...
,	(212) 7...	
Access Communications	(212) 4...	
Alkemade, Monique A.	(619-62...	

Messages:

From	Subject

Screen 8: Plus! Pack's PIM Today displays all of the day's PIM data in one window.

www.microsoft.com/windowsce/products/download/pluspack.asp

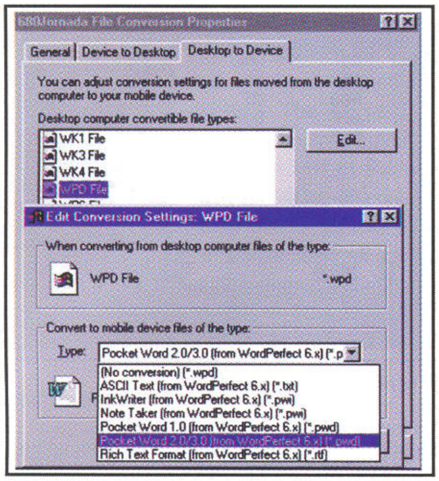
Here are some of the free but unsupported programs you'll find in Plus! Pack:

- Program Switcher – quickly go from one application to another.
- Resource Meter – display the amount of program memory, storage memory, and main battery power (see Screen 4).
- Mute – activate or turn off all sounds.
- Pocket Paint – a pocket-size version of Microsoft Paint (see Screen 5).
- Squares – a game of strategy (Screen 6).
- Pocket Word Count – counts number of words in an open Pocket Word document.
- Image Viewer – display .gif, .jpg, most .bmp, .xbm, .png and .tif files (Screen 7).
- Outline Converter – converts Pocket Word outlines into Pocket PowerPoint presentations.
- PIM Today – displays all of the days PIM data in one window (see Screen 8).
- Spell Checker – checks the spelling in outgoing messages in Inbox.
- Pocket PowerPoint Templates –templates for Microsoft (desktop PC) PowerPoint 97 used to create presentations that can be viewed in Pocket PowerPoint.
- Plus! Background Image – a background image for your H/PC's desktop.
- Favorites – lets you synchronize Internet Explorer Favorites between the desktop computer and the Handheld PC.

Check out this dynamite new download

PowerGizmo™
Personal and Business Software
Windows CE PalmPilot
Leveraging the Portability of Handheld Computers
Simple • Intuitive • Inexpensive
CDGizmo Catalog your audio CDs
DiaryGizmo Record your diaries
GiftListGizmo Track your gift lists
GroceryGizmo Manage your grocery list
HouseHuntGizmo Compare houses
MeetingGizmo Manage your meetings
MessageGizmo Record your messages
MortgageGizmo Compare mortgage rates
VideoGizmo Catalog your video library
PowerGizmo Technologies
811 South Blvd., Suite 200
Rochester Hills, MI 48307
www.powergizmo.com

CEWINDOWS.NET
logo by jason@kensai.com
Chris De Herrera's Windows CE Website
Home of the largest collection of FAQs on Windows CE!
Articles on...
■ Comparisons ■ Reviews
■ Pictures ■ Commentary
■ Screen Shots
FAQs on...
■ Communications ■ Maps
■ Data Storage ■ Printing
■ E-Mail ■ Wireless
Covering all aspects of Windows CE from Ps/PCs, H/PCs to Embedded Systems
Visit us at http://www.cewindows.net


680Jornada File Conversion Properties
General
Device to Desktop
Desktop to Device
Edit...
Edit Conversion Settings: WPD File

You can adjust conversion settings for files moved from the desktop computer to your mobile device.

Desktop computer convertible file types:

- WK1 File
- WK3 File
- WK4 File
- WPD File

When converting from desktop computer files of the type:

WPD File *.wpd

Convert to mobile device files of the type:

Type: Pocket Word 2.0/3.0 (from WordPerfect 6.x) (*.p

- (No conversion) (*.wpd)
- ASCII Text (from WordPerfect 6.x) (*.txt)
- InkWriter (from WordPerfect 6.x) (*.pwi)
- Note Taker (from WordPerfect 6.x) (*.pwi)
- Pocket Word 1.0 (from WordPerfect 6.x) (*.pwd)
- Pocket Word 2.0/3.0 (from WordPerfect 6.x) (*.pwd)
- Rich Text Format (from WordPerfect 6.x) (*.rtf)

Screen 9: To view WordPerfect documents on your H/PC, open the Mobile Devices application on your desktop PC, select the Tools menu, then File Conversion option, and finally the Desktop to Device tab. Scroll down the list titled "Desktop computer convertible file types" until you highlight the WPD File. Click on Edit, and make sure you select "Pocket Word 2.0/3.0 (from WordPerfect 6.x) (*.pdw)."

for H/PC Pro users only. It will not work on H/PCs running Windows CE 2.0 or 1.0.

6. Inbox limits e-mail message size

Pocket Outlook limits the size of E-mail received to 16K due to the smaller memory sizes of palmtops. If you need it larger just have the sender use attachments.

7. Does ACT! for Windows CE work with the H/PC Pro? Not yet!

The Symantec Web page indicates that it doesn't yet work on Palm-size PCs or H/PC Pros running CE 2.11. Some users report that the current version actually does work, but has some minor problems. For example, one user reports that when you tap on the ACT icon to start the program the light and schedule alarm goes off and you get a warning that the scheduled alarm would not work. According to the report, there doesn't seem to be any harm in it. Also there may be only one database that can be created. For more information, go to www.symantec.com and search on Windows CE.

8. Free: PowerToys for H/PC Pro

Microsoft has released their new version PowerToys 3.0 for H/PC Pro users. Download it free at Microsoft's Windows CE Web site.

www.microsoft.com/windowsce/
products/download/powtoy30.asp

PowerToys 3.0 includes the following utilities and applications:

- Pocket Registry Editor – lets you change settings in your Handheld PC's registry. [Warning: don't use this unless you know what you're doing.]
- Flight Scheduler – inserts flight information into your Calendar.
- Business Cards – lets you exchange electronic business cards using your Handheld PC's infrared port.
- Quick Start Menu – access a Quick Start menu from an icon on the taskbar.
- PIM Transfer – lets you transfer PIM data to another Handheld PC using the Calendar and Tasks programs.
- File Associate – double-tap on a file in CE Explorer and it opens in the appropriate application.
- Sounds – adds several sound schemes, including Analog, Metallic, Organic, and Sci-Fi.
- Ping – verify connections to remote hosts.
- Handheld PC's IP address – lets you determine the H/PC's IP address, Subnet Mask and Default Gateway.
- Hostname Lookup – looks up a hostname, also useful for troubleshooting.

9. Empty Recycle Bin immediately to maximize internal memory

When you delete a file, you don't really get rid of it. It is stored in the Recycle Bin just in case you made a mistake and want it back. That's a handy safeguard, but the file is still taking up file storage space. Empty your Recycle Bin frequently to free up storage space. I almost never need the files I toss in the Recycle Bin, so I've set things up so that when I delete them, they skip the Recycle Bin and are gone for good. Hold down <alt> and tap once on the Recycle Bin icon. Then select Properties and check the box labeled. "Do not move files to the Recycle Bin, remove immediately on delete." Remember, when you set things up this way, you don't have a second chance.

10. Hard disk on a Jornada 680?

I've seen reports that Avatar's (www.goavatar.com) Shark 250M PCMCIA drive is working with the Jornada 680 as Storage Card1. That jumps the storage to 250M, baby. Other rumors are that they're not answering their phones. More data later at our Web site.

11. "Wake up, honey!"

Have someone you love record a wakeup message on your palmtop and then move that .wav file to the Windows directory. You now will be able to select that voice file from the

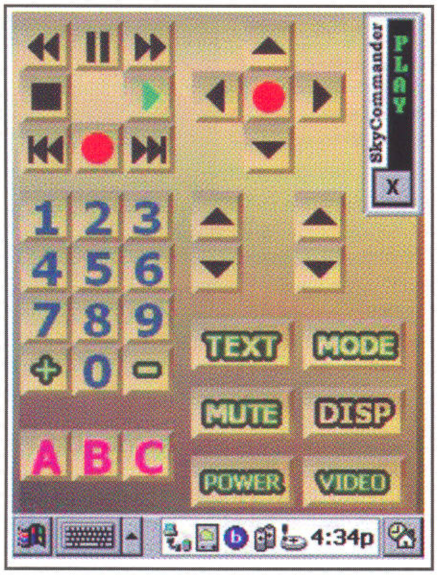
A graphical FTP client for Windows CE, Scotty FTP lets users upload or download files with a single tap. Scotty FTP can connect to the Internet or local Intranet using modem or direct serial connection. It also displays FTP commands being executed and the server responses.

FEATURES
- Connects to any FTP server around the world through an intuitive native Windows CE graphical user interface
- Complies with the standard Internet FTP specification RFC 959
- Maintains Server Profiles along with login information
- Quick Connect feature for immediate access to an FTP server
- True Windows CE 32-bit, multi threaded application

$29.95
Works with Windows CE 1.0 and 2.0
Available at:
http://www.ruksun.com
or
E-mail: info@ruksun.com

Ruksun Software Technologies
http://www.ruksun.com
SCOTTY FTP

FREE Handheld PC!*
Better Work Measurement
◆ Powerful, yet easy to learn and use.
◆ Do 3-hour time study in one hour!
◆ "On the fly" study accuracy feedback.
◆ Superior data management features
*Get FREE Handheld PC with puchase of CITS or CAWS/E system while supplies last. Call or visit our website for details.
C-FOUR www.c-four.com 1-800-558-2514

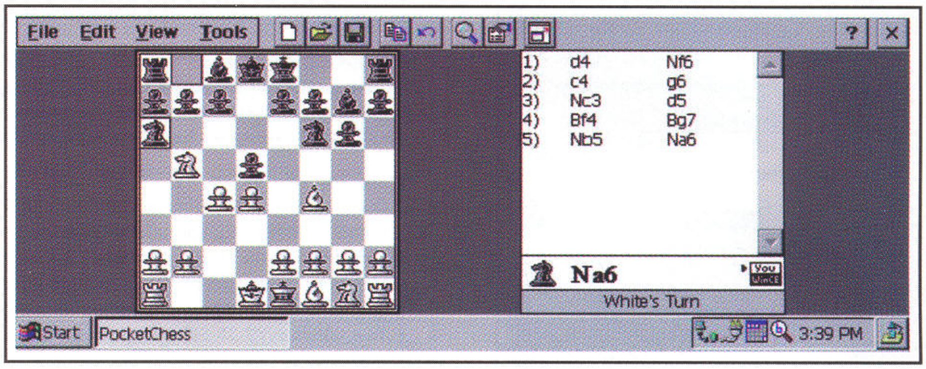


Screen 10 SkyCommander turns your SH3 Handheld PC, or Palm-size PC (shown here) into a universal remote control.

available alarms list. You can even link any sound to events, tasks, and appointments.

12. Attention, HAM radio CE users

The built-in terminal program should work for packet operations with, say, PK-88. Check www.qsl.net/kc7gnm/packet_hpc.html for setup instructions. Also, WinAPRS (Automatic Position Reporting System) for Windows CE will be coming soon, if that will help you. Keep reading my column for updates.



1)	d4	Nf6
2)	c4	g6
3)	Nc3	d5
4)	Bf4	Bg7
5)	Nb5	Na6

Na6

White's Turn

Screen 11: PocketChess v 1.0 is an excellent and difficult chess program for H/PCs and Palm-sized PCs.

13. Wireless e-mail everywhere!

Microsoft has announced plans to deliver a wireless portal through MSN, designed to work with Windows CE-based handheld devices. I'm guessing it will be available at select cities this year.

14. View and edit WordPerfect documents on an H/PC

Quick View Plus for Windows CE (www.inso.com) came with my HP Jornada 680 and lets me view but not edit WordPerfect's .wpd document format. Unfortunately, its developer does not market the product to end users. Unless you have the Jornada, you'll have to wait on that one. However, any H/PC user can use Windows CE Services to translate WordPerfect documents to Pocket Word format, and back again.

Open the Mobile Devices application on your desktop PC, select the Tools menu, then File Conversion option, and finally the Desktop to Device tab. Scroll down the list titled "Desktop computer convertible file types" until you highlight the WPD File. Click on Edit, and make sure you select "Pocket Word 2.0/3.0 (from WordPerfect 6.x) (*.pdw)." Then click on OK (see Screen 9).

Next, select the Device to Desktop tab, highlight Pocket Word Document, click on Edit, and select the desired WordPerfect desktop format you want to convert to. Make sure that you convert to a version of WordPerfect that is equal or previous to the version you have on your desktop PC. WordPerfect recognizes documents from previous versions but it may not recognize documents formatted for subsequent versions of WordPerfect. Also, make sure you select an option with the phrase "(from Pocket Word 2.0/3.0)" in it.

15. Keep your golf score with this dandy program

IntelliGolf 4.0 adds more fun to your round by (a) automating golf scoring, (b) downloading course information from the Internet, (c) capturing round statistics, (d) tracking your wagers and (e) presenting historical round averages. Get it at www.intelligolf.com.

16. Need an alternative to Xaudio?

Try UtopiaSoft's Hum MP3 player for Windows CE 2.0 H/PCs and Ps/PCs. Hum plays ISO standard MP1, MP2 and MP3 files, supports mono and stereo playback, complies your MP3 files into a playlist, and comes with UtopiaSoft's AdaptivePlay™ technology, which detects the multimedia capabilities of an HPC or Ps/PC (CPU,

World #1:

Compact I/O Cards for PalmPC, Handheld PC

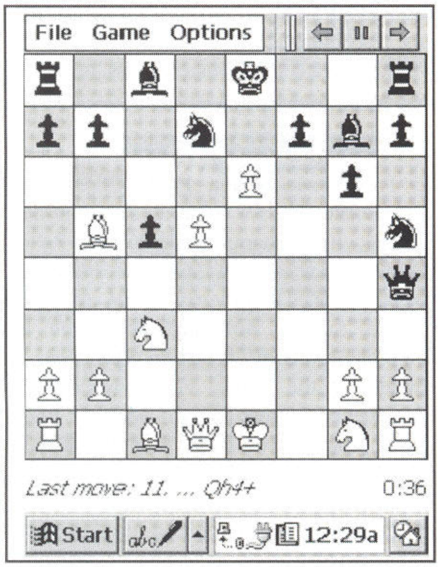
PRETEC
CompactModem 56K

- CompactModem 56K
- CompactSerial, CompactParalell, CompactScan
- CompactFlash™ 4MB-48MB
- ATA Flash cards 4MB-160MB, or 320MB (Type III)
- CompactLan 10BaseT/2

Internet: http://www.pretec.com

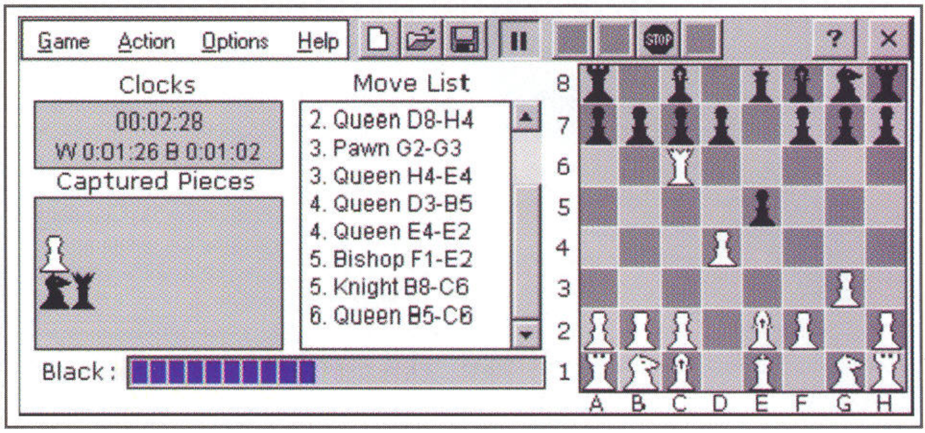
PRETEC

(Phone) 510-440-0535 (Fax) 510-440-0534
(Email) cardinfo@pretec.com



Last move: 11. ... Qh4+ 0:36

Screen 12: PalmChess is for the Palm-size PC only. It includes an opening database with 4000+ positions and lets you play the computer, another friend, or watch the computer play itself.



00:02:28
W 0:01:26 B 0:01:02

2. Queen D8-H4
3. Pawn G2-G3
3. Queen H4-E4
4. Queen D3-B5
4. Queen E4-E2
5. Bishop F1-E2
5. Knight B8-C6
6. Queen B5-C6

Screen 13: Midnight Chess for your H/PC lets you select one of 35 different playing levels, create, open, and save games, request the computer to suggest a move, and more.

mono/stereo sound support, monochrome/-color display) to deliver optimal audio reproduction. A free demo of Hum is available at www.utopiasoft.com.

17. Netscape for Windows CE coming

Yep, a group of independent programmers are working on a CE version of Netscape. They aim to port "mozilla" (the open source version of Netscape navigator) to small device platforms. The project is just getting started, but you can check it out at www.vcce.com/mozilla/index.htm.

18. Use desktop shortcuts sparingly

Placing often-used applications on your H/PC's desktop makes them easy to access from the opening screen. However, every time you open the desktop, it has to draw the icons on the screen. The more shortcuts on the desktop, the more time and processing power required to refresh the screen. It's a good idea to only keep icons for your most used applications on the desktop. Also, never copy an application to the desktop. Instead, create a desktop shortcut of the application. This avoids wasteful duplicate copies of an application.

19. Customize your startup image

Want to see your children or significant other every time you start up you H/PC? Create an electronic image of the photo you want displayed using a scanner (or take a photo with a digital camera). Save the image in bitmap format (.bmp) and name it "startup." Next go to the Windows directory of your H/PC, find the current image named "startup" and rename it. Then transfer the new startup bitmap to the H/PC's Windows directory. Finally, reset your H/PC. Every time you start it up, the image will be displayed. *[Note: Some H/PCs have 640x240 pixel displays, others have 640x480, and a few of the newer H/PC Pros have 800x600. To make the image display properly, you may want to open it in a desktop PC graphics program and resize it. You may also have to save a smaller horizontal section of the photo so that it doesn't distort when you resize it to the dimensions of your H/PC's screen. You may also want to reduce the colors of the image to 256 if that is all your display can handle.]*

20. Medical professionals: Check out Handheld Med

If you are interested in PDAs and the medical profession, you should take a look at handheldmed.com/, a Web site devoted to clinical handheld computing news, reviews, and "informatics in medicine." Handheld med.com provides a forum specifically for users of 3Com PalmOS and Microsoft Windows CE platforms.

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21. Turn your PC Companion into a TV/VCR Remote Control

SkyCommander turns your H/PC or color-screen Ps/PC into a customizable Universal Remote Controller for all your consumer appliances like TVs, VCRs, Air Conditioners, Disc Players, etc... (Screen 10). Note that SkyCommander only works with PC Companions with SH3 processors. It will not work with MIPS CPUs. You can get this dynamite free program at the SkyCommander home page: freehosting1.at.webjump.com/sk/skycommander-webjump/SkyCommander.html# download.

22. Does Iomega's Clik! Drive work with H/PC Pros?

Iomega's Clik! Drive adds file storage capability to H/PCs, but is not compatible with Windows CE 2.1 and 2.2, or so they say. Their Web page states "Mobile devices running Windows CE 1.x and 2.0 are supported. There currently is no support for Windows CE 2.1 or 2.2. An error message of 'Unsupported OS' will be returned by the installation software if used on non-supported operating systems or processors." However, I downloaded the newest Clik! drivers (dated March 99) from their Web site and installed them on my Jornada 680. Clik! works without any problems. The download is at www.iomega.com/software/drivers.html.

23. Three Chess programs

I've never beaten PocketChess, can you? PocketChess v 1.0 is an excellent and difficult chess program for H/PCs and Palm-sized PCs (see screen 11, CE 2.0+, including Jornada 820). Demo versions are available at the Scott's Software Web site at www.eskimo.com/~scottlu/wince/. For a review of the game, visit www.celair.com/pocketchessppc10.htm. Another good chess program for Ps/PC's is PalmChess (see Screen 12). It includes an opening database with 4000+ positions and lets you play the computer, another friend, or watch the computer play itself. It can be downloaded at www.synctel.com/Products/PPC/PalmChess/index.html. Lastly, Midnight Chess for Windows CE is an H/PC program that lets you play against a powerful chess engine (see Screen 13). You can select one of 35 different playing levels, create, open, and save games, request the computer to suggest a move, and has built-in chess

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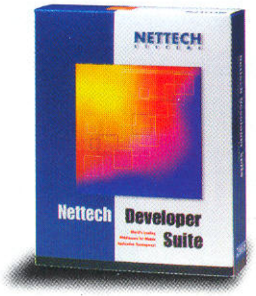

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clocks with pause capabilities, among other features. This is an older program from Midnight Programmers, but their Web site (www.midnight-programmers.com) says that Version 2.0 is coming soon.

24. H/PC Pro users: Store e-mail attachments on a PC/CF Card

The H/PC Pro models allow you to specify where you want your e-mail attachments to be stored. Have them stored on a PC/CF memory card to save main memory space. The actual e-mail message must be stored in the main memory, but that's fine with me.

25. Win CE Audio Player review

There are a number of audio players now available for PC Companions, including Xaudio, ModPlayerCE, Hum, PalmPlayer (Beta), and AudiblePlayer. An excellent review by Julie Strietelmeier is found on the Gadgeteer Web site: www.the gadgeteer.com.

26. MoreTodo improves on Tasks

The program "MoreTodo" allows you to organize tasks into folders. It also sorts and highlights tasks based on importance, completion, due dates, etc., so that it's easy to distinguish the task you should have done yesterday from the other tasks you don't need to worry about until next week. A beta version of this program is available at www.transport.com/~ddrew/productindex.htm, for Windows CE 2.0 H/PCs (SH3 and MIPS processors) and CE 2.01 Ps/PCs (SH3 only).

27. Problem reading newsgroup messages?

Sometimes I have problems viewing newsgroup messages I've downloaded to my H/PC. The headers and messages may not map up, and sometimes I'll click on a header and there won't be anything in the message. The only thing I've found to correct the problem was to download smaller batches of 100 or fewer messages.

28. Multiple message recipients

If you're using Pocket Inbox to compose e-mail messages, and you want to send it to more than one person, separate the addresses with a semicolon. So if I wanted to send a message to Rich Hall and Hal Goldstein at *Handheld PC Magazine*, the address would look like this:

rich@thaddeus.com; hal@thaddeus.com

This also works for carbon copy addresses.

29. "Saved" e-mail stored in Inbox – "Sent" in Outbox

If you compose a new e-mail message off-line or on-line and "save it," it is stored in the Inbox and is still available for you to look at again and edit before you make the final decision to send it out. Once you send it, it's moved to the Outbox where it waits until you connect up to your ISP or synchronize with your desktop PC. You can still open and edit a message waiting in the Outbox.

30. Where can I get Pocket Access?

I get that question a lot. The answer is that you have to upgrade to the H/PC Pro. You cannot download and install the program. You must either purchase a new H/PC Pro, or contact your H/PC's manufacturer to see if they offer an upgrade chip that will turn your Windows CE 2.0 machine into an H/PC Pro.

31. Movie previews on the E-100/105

Casio's E-100/105 comes with an video player that lets you view movies that have been converted to Casio Movie Format (cmf) files. Here's a link to a Web page that

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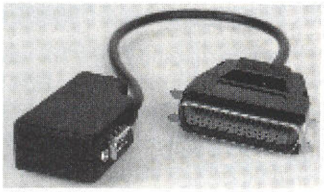

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has a few movie "trailers" in cmf format:

www.netins.net/showcase/
tpeer/e100/mpgs.htm

A long Star Wars movie trailer can be found on the following Web page:

wso.williams.edu/~rfoxwell/starwars/
Episode1TrailerB.htm.

It is in .mpg format, so E-100/105 users will have to use the desktop PC conversion utility from Caso to convert this 22 MB mpg video to a compressed 7MB cvf file that will play on the E-100/105.

32. Coming: Casio E100/105 CompactFlash Digital Camera

A CompactFlash digital camera is available in Japan now. Rumors are it will hit the U.S. in October of 1999.

33. Jot Pro for the E100/105?

The current version of Jot Pro is not designed for use on a 16-bit 64K color Ps/PC like the E-100/105. You can get it to work if set the Ps/PC to display 256 colors, but who wants to do that. CIC is working on an upgrade. Check out www.cic.com for more information.

34. CompactFlash GPS from Casio?

Casio announced a compact flash GPS that has mapping for all of Tokyo. Let's hope it hits our shores soon.

35. Replace logo on active desktop

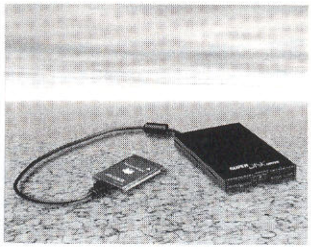
Create a .gif file & name it "dttitle" and place it in your \Windows\Temporary Internet Files\ directory on your handheld.

36. Linux and Windows CE

The LinuxCE Web site (www.linuxce.org/) is the home of a project that will port the Linux operating system to the Windows CE Handheld & Palm-size PC platform. The Web site will keep developers and other interested parties updated on the topic, organize various efforts related to porting Linux to those platforms, and interface with hardware manufacturers who wish to help. They have links and download sections. The project started in late March of this year. Good reading if you're into that stuff.

37. Navigating the Start menu on a bumpy ride

When I'm riding in a car or on an airplane I sometimes have a hard time using the stylus to tap on the Start menu button, or select its options. Fortunately, the H/PC has a Start menu button in the lower left corner of the keyboard (with the Windows flag on it). Press that and use the arrow keys to navigate through the Start menu. When you open the Start menu, you'll notice that the first letter of each of the items is underlined, with the exception of the Suspend command, which has the second letter underlined. Press the key and you go to the corresponding menu. For example, to go to the Programs menu, press Start and then P.



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38. HP's offer you can't refuse

Hewlett-Packard has announced that it will offer a 16MB CompactFlash card, plus 3 bonus applications with the HP Jornada 420 Palm-size PC. The applications include an enhanced video driver, giving 16-bit 65K color just like the Casio E-100, Sierra Imaging's Image Expert CE, and an HP voice-activated contacts finder. See more at www.hp.com/jornada.

39. Casio E-100/105 MP3 tricks

The E-100's MP3 player supports screen-off during playback, which conserves battery life. If you use MP3 a lot, and I do, you can configure the E-100's hardware buttons to activate the desired MP3 controls. I have my E-100's Gamepad set to volume/track skip and the other three buttons on the front set to start/screenoff/stop.

40. "Doom" on CE – believe it?

Still a little buggy, but take a look at this CE version of this popular action game. The latest version supports MIPS and SH3 H/PCs, includes sound effects, and is a lot more stable, but will still lock up occasionally. Installation instructions on the Web site. Download at www.eskimo.com/~hayes/doomce.html.

41. Add a hard disk to your Ps/PC?

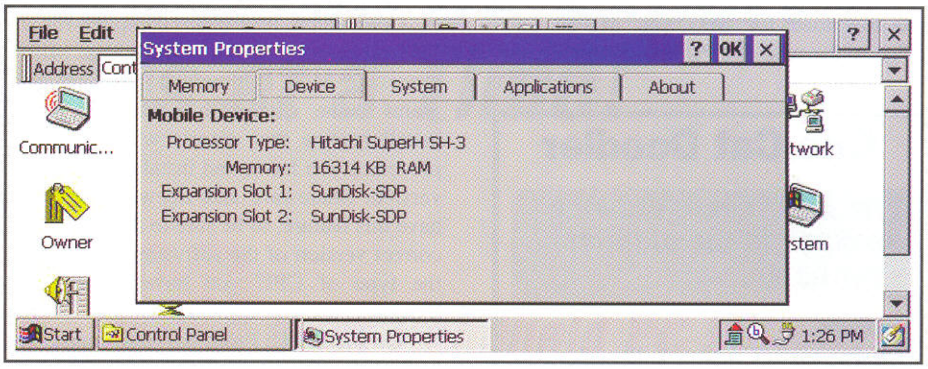
IBM's new MicroDrive WILL WORK in the Casio E-100, according to this quote taken from PDA Dash's coverage of the Developer's Conference:

> *"IBM's hotly-awaited MicroDrive Compact Flash hard drive continues to inch closer and closer to a ship date. The first folks to get a hold of the 170mb and 340mb drives will be OEMs, who will use them in MP3 players and other data-intensive devices. The drive will run in Ps/PCs like the E-100 — imagine what fun you can have! The predicted retail price is about 1 dollar per meg."*

For more info, go to: www.pdadash.com/news/reports/cedevcon/report.shtml.

42. How much space left on your storage card?

Windows CE doesn't tell you how much space is being used or is left on a PC or CompactFlash storage card, and that information comes in handy sometimes. Check out Storage Card Applet (www.grundlesoftware.com) for a simple utility that lets you know how much space is left on your PC or CF storage card. Storage Card Applet is available for H/PCs, H/PC Pros, and monochrome screen Ps/PCs. A Palm-size PC only utility named "See CF" is available at www.amarcomputing.demon.co.uk/.



System Properties

Mobile Device:
Processor Type: Hitachi SuperH SH-3
Memory: 16314 KB RAM
Expansion Slot 1: SunDisk-SDP
Expansion Slot 2: SunDisk-SDP

Screen 14: To determine your processor type on the H/PC, go to Control Panel, open the System application, select the Device tab and look next to "Processor Type."

43. PowerToy Dialer fix!

Here's an update to Microsoft's DTMF Dialing PowerToy that comes with Microsoft's PowerToys for the Palm-size PC version 1.0 utility...and it's not from Microsoft. The update addresses the problem of the DTMF Dialing PowerToy not working on Windows CE 2.11 systems including the Casio E-100, E-105 and Compaq Aero 2100. You must install DTMF Dialing PowerToy prior to installing the update. The update is at: www.foliage. com/ce and PowerToys is at www.microsoft.com/windowsce/products/download/powtoy-ppc.asp.

44. Printing from PIE

Printing documents is not supported by the Windows CE 2.0 version of Pocket Internet Explorer. The only way to accomplish this is to cut and paste from PIE to Pocket Word, and to print from there.

45. SH3 or MIPS: What CPU does your PC Companion have?

Sometimes, when you're downloading shareware or freeware, you'll notice sepa-

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rate downloads for “SH3” and “MIPS.” This refers to the type of CPU being used in your PC Companion. A program compiled for an SH3 processor will not work with a MIPS processor. Most commercial software programs come with both versions and an install routine that detects which type of processor you have, and installs the correct version. Shareware and freeware may not have this feature, so be sure to download the correct version of the software. To find out the type of CPU you have, open your System Properties application.

On the H/PC: From the Start menu, go to Settings, Control Panel, System. The tab labeled “Device” lists the processor type (see Screen 14). On the Ps/PC: From the Start menu, go to Settings, System. The tab labeled “General” lists the processor.

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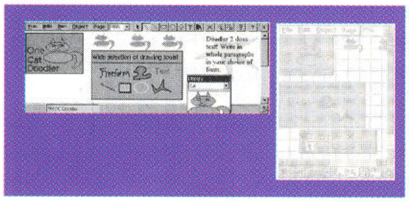

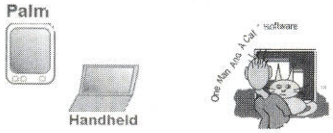
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46. Ps/PC tips for the intrepid hacker

I don’t like messing around with the Windows registry on my PC Companions, but this guy at Diversions Software does so and improves the product. If you dare, go to www.divsoft.com/ce/ and check out some of his modifications.

47. Increase your battery life

The Casio C-100’s color screen is gorgeous, but with contrast turned all the way up and backlighting on, battery life is a bit ugly. I found that pushing it down only one notch increased battery life nearly two-fold. Me, I leave it up…and love the brightness and color. My Jornada 680 is dim alongside it.

48. Free loan calculator

Why pay for a full-blown financial calculator if all you want to do is calculate loan payments? This application calculates the loan principal when you enter the interest rate, the term in years and the loan payment. It also calculates the loan payment when you enter in the interest rate, the term in years and the loan principal. Go to www.serve.com/uccats/ceapps/loancalc.zip to download it. ■

49. Quick “FTP” download for Windows CE Services

Sometimes I can download software faster through an ftp site. FTP stands for “File Transfer Protocol” and downloading files is all FTP sites do. You can use special FTP software to access these sites, but most Web browsers have FTP capability. Enter the FTP site’s URL (beginning with ftp://) in the browser’s Address window and hit Enter. Listed below is an FTP URL for the Windows CE Services 2.2 download. It’s from Hewlett-Packard’s Web site, but the software will work with any CE 2.0 H/PC or Ps/PC. Go to:

ftp://ftp.hp.com/pub/handheld_computers/software/wces22.exe .

50. Sell your old PC Companion online

It seems like I’m buying a new handheld every six months. Many times the old one goes to a family member or friend, but I occasionally try and sell it. If you’re in a similar situation, here are a few sites that you can use to sell yours:

http://palm-posts.virtualave.net/cgi-bin/classifieds/classifieds.cgi
http://www.ebay.com
http://www.onsale.com
http://www.cityauction.com/
http://www.mrpalmtop.com/
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Tom Gibson
Technical Editor

Just the FAQs, please.

We were working the day-watch out of Tech Support when the call came in. My partner is Bill Computercrash. I'm Joe Thursday.

Bill took the call. It was from the V.P. in sales. She was ready to go out on the road for a week and couldn't get her H/PC to sync. She said she didn't know how she would be able to connect while out on the road. Bill handed the call to me.

The V.P. seemed distraught and was bouncing around like a ball going down a bumpy hill. I stopped her and said, "Just the FAQs Ma'am." She seemed to calm down a little, and after catching her breath said, "That's what I am doing, giving you the facts." She just didn't understand. "Yes ma'am," I said. "But what I mean is that you need to look at the FAQs – Frequently Asked Questions, that's where the answers are."

Frequently Asked Questions

FAQs are documents with common questions and the answers to them. The most prominent type are the ones used by most companies trying to support their products. Tech Support personnel compile a list of the most often asked questions and provide the answers to those questions. This saves them a lot of time and money because they can refer people to the FAQ instead of answering the same question over and over. Companies also create pre-emptive FAQs, more like a mini-tutorial. Instead of listing a bunch of short questions and answers, each FAQ goes into more depth and is a stand-alone document.

But companies aren't the only ones who create FAQs Many computer enthusiasts create and publish FAQs. What's in it for them? Helping fellow computer users. Listed below are some of the better places to go for FAQs.

www.CEWindows.NET

Contributing Editor Chris de Herrera's site is loaded with FAQs ranging from ActiveSync and ActiveSync configurations to ISP settings and Wireless. Chris updates his site and FAQs constantly, so this is a great place to check when you have a question about Windows CE. Microsoft has given CEWindows.NET featured site status and says, "CEWindows.NET contains one of the best collection of resources on Windows CE-based products to be found on the Web." This is usually the first place I look when I need to find out how to do something. Note that the section titled "Other Windows CE Internet Resources" has a very complete list of links to other sites with How-To's, Tips, and FAQs.

www.fmcpherson.com/knowce/

Frank McPherson runs the CE Knowledge Center and is an Assistant Forum Manager of the Windows CE Forum on MSN Computing Central. Frank has separated his FAQs into 4 sections: How do I ...? – provides answers to questions like, "How do I synchronize Windows CE with Microsoft Outlook?" Answers include links to other sites which answer the question. What is ...? – provides answers to questions like, "What is Windows CE?" or "What is the H/PC Pro." Where is ...? – provides answers to questions like, "Where is the HP Month-At-A-Glance patch?" The section consists primarily of links to other sites. What's hot? – provides links to the hottest Windows CE news. Frank has done a lot of work on these FAQs and it is a great site for information.

www.windowsce.kensai.com/faq/

Home of the Official Windows CE Newsgroup FAQ, maintained by Jason Dunn and Frank McPherson with the assistance of Miles Raymond. This FAQ is separated into the following categories: Software; Hardware/Cell phone; Synchronizing issues; Connecting issues; Internet/-Email issues; Printing/Faxing and Further Information. In total, there are over 105 questions and answers or links to answers on this site.

www.microsoft.com/windowsce/default.asp

Microsoft's Windows CE Home Page. Microsoft is the creator behind Windows CE and you can always go to their site for information, but it's usually harder to find it here than at other sites. Below is the current (7/13/99) location for Windows CE support, but it is liable to change. www.microsoft.com/windowsce/Products/Support/ms.asp.

www.homestead.com/palm/

Mike's Palm-size PC FAQs. Mike's site is currently being moved to his new host and he says it will be up on July 25, 1999.

http://to-tech.com/windowsce/faqs/photo-faq.htm

TO-TECH Windows CE Photo-FAQ, a short but useful FAQ. Also, they have a little step-by-step on how they installed Windows CE Services 2.2 on a Windows NT 4.0 desktop.

http://windowsce.kensai.com/velo/index.htm

The Unofficial Velo FAQ site is run by Jason Dunn and has an FAQ for Velo users. It also covers general news, software, hardware and has a wish list.

The article you have just read is true, none of the URL were changed to protect the innocent. I don't wear a badge, I just surf the web. So until next time, I'll see you OnLine! ■

Andrew M.
Seybold

Wireless Transactions

One of the key benefits of being "wirelessly connected" is the ability to get updated information in real time. Those companies that are interested in providing wireless handheld devices to the masses (horizontal users) are concentrating on providing updates to calendars, address books, and task lists. However, there are a number of applications already up and running that are providing real value to mobile workers today.

Wireless Vertical Markets

Suppose you are a salesperson dealing with supermarkets. Your job is to visit each of your stores, check on inventory, and then recommend an order to get them back up to the proper stock levels. In addition, you want to make sure that they are aware of the specials your company is running and, of course, you want the order placed as soon as possible so that you can get your commission check.

In times past you would enter the store, fill out stock on hand reports, and then transfer the suggested re-order items to an order sheet. The store manager would then sign the order and you would turn it in at the end of your day. Once it was turned in, the order would be entered into the company's computer system and an order would be generated.

Today, you walk into the store, use a bar code reader to take inventory, call up the store's order history on the screen of your handheld device, update the order, and have the store manager sign off on it. Then, as you return to your car to drive to the next stop, the order is transmitted via wireless to your company. It is then processed and ready to ship, usually days earlier than doing it the old way.

Or suppose you are a salesperson visiting purchasing agents in large companies. The purchasing agent has a need for 10,000 widgets and can buy them from you or any one of your competitors. The items are needed quickly, and you have to commit to a delivery schedule. Not too long ago you might have obtained the information and called back the following day with an answer. Or you might have asked to use his phone to call the order desk to verify the quantities available. But until you actually turned in the paperwork, the items remained in open inventory available to other salespersons.

Today, you might turn on your wireless handheld, check inventory in real time, and then place the order the same way, ensuring that the stock on hand was allocated for your customer. While you are in his office, he asks you about a new product. You do not have the latest specification sheet with you so, using your H/PC, you connect to your company's system and you have a spec sheet faxed to your customer. It arrives while you are still in the meeting.

Other Examples

There are hundreds of examples where near real-time wireless access can help you close an order, get information that is time critical, update a price, check inventory, and even check on the credit status of your customer. Police in the field can check on a license plate or driver's license without having to talk to a dispatcher. Fire department personnel can check on the type of hazardous materials they find at an incident, and delivery companies can track a package and know exactly when it was delivered and to whom, all in near real time.

Recent wireless data applications include getting life insurance quotes in real time while still sitting in front of the customer, locking in a mortgage rate while sitting in the living room of your client's house, and even being able to access the real estate multiple listing service to find a house that is for sale that meets your client's criteria.

Wireless Transactions

A handheld computer with a wireless modem is an ideal combination for transaction-based applications. If software developers know that the application will be used in the field they can write code that is smart

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enough to minimize the amount of data that is sent over the air. For example, a large, bulky price list can be stored on the computer before leaving the office. Only changes and updates to the price sheet need to be sent over the wireless network.

Or, a list of service calls can be downloaded wirelessly to the device during the off-peak early morning hours and then only changes and updated status of the calls need to be sent and received during the day. It is important in all of these applications to understand the limitations of wireless communications and the power of the handheld device. Marrying wireless and handheld computers can provide powerful business tools that give mobile workers a real advantage over their competition.

FedEx

Perhaps the most sophisticated wireless data network in the world is that run by Federal Express. FedEx has now begun to equip even its package drop boxes with wireless modems. When a package is dropped into one of these boxes, a notification is sent over the network and the nearest truck is notified that there is a pickup at that location. Once the driver picks up the package, another wireless transmission is sent over the network telling the system when it was picked up and what truck it is on. During the entire time FedEx has the package, they know where it is and when it is delivered. They can almost instantly tell you when the package was delivered and who signed for it. Because FedEx has such an extensive system, it has set the standard for this type of package tracking. UPS, Airborne, and other companies have had to deploy their own systems in order to keep up and remain competitive with FedEx.

H/PCs vs. Phones

During the last half of 1999 we are going to be deluged with new cellular and PCS phones that include a WAP (Wireless Application Protocol) browser in them. These devices are designed to provide both voice and data access for mobile workers. However, most of these WAP-enabled phones do not have the ability to store any information or applications in them. They merely provide a way to access information that is hosted on a remote server and have it delivered to a screen that is small (usually 4 lines of 16 characters).

It is important to understand the differences between these WAP phones and an H/PC equipped with a wireless modem. The WAP phone is merely a voice phone with the ability to access information stored remotely, while a wireless H/PC is a computing device with application and data storage. The wireless connection adds significant value to an H/PC, but even when out of network coverage, the H/PC is a "smart" device and can be used productively. A WAP phone is useless when it is out of coverage. No prices can be checked, no messages can be received, and no appointments can be referenced.

The entry of these WAP phones into the market is being preceded with lots of advertising dollars to convince us all that this is the greatest combination of wireless voice and data technology ever invented. My take is that these phones are interesting and for some light data uses they will prove to be of value. However, if you want to be sure that what you are carrying is useful inside buildings and outside of network coverage, a well-equipped H/PC should be your device of choice—wireless simply adds value to the timeliness of your data. A WAP phone only provides data some of the time.

A World of Transactions

We live in a transaction-based world. Almost everything we do is based on one or more transactions. Obtaining information is nothing more than a series of transactions, ordering wine is a transaction, and updating a database that resides on your H/PC is also a transaction.

H/PCs are intelligent devices that can store important data on them—data that we need in the normal course of our work or play. Adding wireless to these devices increases their productivity by providing near-real time access to remotely located information that we need to better handle our daily assignments. If you think of the wireless connection between the H/PC and the back-end information stores as a pipe that provides near-real time access to that data, and the ability to update it both at the source and on the H/PC as well, you will understand the value of the marriage of these technologies. ■

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Terence
Goggin

Is Windows CE Microsoft's Java Killer?

[This is the first in a regular series of columns by Terence "Dr. CE" Goggin that will look at Windows CE developments and how they will affect PC Companion users, Windows CE developers, and the world of handheld computing. We'd like to welcome Terence aboard Handheld PC Magazine *and look forward to his contributions – Rich Hall.]*

When railroads started in this country, there were many different kinds of gauge (or track size) in use. Every company used a different gauge track. Therefore, travelers who wanted to go any real distance would have to get on a train for a short while, switch to a different train, then ride that train for a short while, switch trains again, and so on until they reached their final destination.

As you can imagine, this made traveling by train a real chore.

Eventually, someone realized that if the railroads wanted to make serious money, they would have to standardize on one track size so that passengers and freight could go across the country without having to change trains even once. Of course, when they finally made this change, it was a huge boon to the railroad industry and an indispensable step.

In many ways, software is at the same place as the railroads were before they standardized on a common track size. For a long time, it's been standard practice to write one program for a Windows 95 machine, and another program for a Macintosh machine, etc., etc. Lately, though, rising costs and other pressures have caused the software industry to rethink this practice and look for ways to write just one program and have it run anywhere.

In many ways, it was Java that inspired this change of thought. You'll recall that Java's main promise was "write once, run anywhere" technology that would allow developers to do just that – write one program and have it run successfully on any machine. However, for a variety of reasons – some technical, some political – it doesn't look like Java will deliver on this promise.

The good news though is that Microsoft appears to be readying a working "write once, run anywhere" solution that involves positioning Windows CE as the "Java Killer."

Common Executable Format

At the recent Windows CE Developers' Conference, Microsoft announced a new technology called the Common Executable Format, or CEF. Currently, when developers write programs for Windows CE, they have to make a separate version of their program for each of the CPUs that might be powering a Windows CE device. CEF is a way for developers to create just one version of their program that runs on any CE device, regardless of which CPU is inside. Essentially, at this level CEF is a "write once, run on any CE device" technology.

This is where it gets interesting… Although most people don't know it, you can already run some Windows CE applications on any Windows NT machine! This is possible thanks to an emulator – a special developer's tool that allows a Windows NT machine to pretend to be a Windows CE machine so developers can more easily test and debug their software. (You'll note that Java works in essentially the same way; it helps your machine pretend to be a Java machine so that you can run Java applications.)

The only drawback to the CE emulator is that until now, due to the way Windows CE stores text characters, only people with high-end NT machines could use the emulator to run CE applications. Therefore, compatibility was somewhat limited.

The good news, though, is that the NT-only limitation will disappear with the release of Windows 2000.

Because Windows 2000 stores text characters in exactly the same format as Windows CE uses, soon everyone will be able to run the CE emulator – and therefore, Windows CE applications – right on their desktop machines.

So, where will Microsoft go with this amazing convergence of disparate technologies?

Microsoft needs a Java Killer

If these related technologies are implemented just right, Windows CE will be a very serious threat to Java. I believe that very shortly Microsoft will be embedding a Windows CE emulator inside their web browser, allowing anyone to run a CE application over the Internet. For example, developers will be able to create one program and have it act as an internet-based application (much like a Java applet) or as a stand-alone application for handheld and palm-size devices. This is a very powerful advantage for developers because they can leverage their existing knowledge of Windows and Windows CE to create Internet-based applications. In addition, it means a shorter development time, as they only have to create one version of their program. Finally, it means that developers do not have to master Java in order to create decent, easy to use Internet-based applications.

It isn't exactly a "run anywhere" solution, but it's getting awfully close.

Until next time… ■

Terence "Dr. CE" Goggin, author of *The Windows CE Developer's Handbook* and a recognized Windows CE expert, has written numerous books and articles on Windows programming and the Internet. He is a Los Angeles-based consultant specializing in Windows CE solutions. You can e-mail Terence at terenceg@doctorce.com, or visit his Web site at www.doctorce.com.

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Hal
Goldstein

Conventional Wisdom or Self-Fulfilling Prophecy?

I recently attended the Windows CE Developers Conference in Denver and PC Expo in New York. Certain themes emerged as I listened to presentations and spoke with Microsoft people, device manufacturers, and third party developers.

I noticed a kind of consensus about the future of handheld computing. I don't agree with all of it, but I think it worth stating, especially since much of it may be self-fulfilling. What do you think about these points?

At present, PC Companions are for corporate vertical markets

Someone stated that all H/PC and Ps/PC sales are vertical. This statement may be extreme, but Microsoft and many of the device manufacturers (OEMs) seem to agree, at least for the present. Handhelds are not yet all-purpose organizing and communications devices for the masses. Rather they are machines ideal for many corporate market segments such as health, sales, field work, and so forth. IBM, Compaq, and HP introduced H/PC Pro's because they see an opportunity for sales to their big corporate clients. It will take time before price, ease-of-use, and market understanding are such that consumers will buy these same devices in significant volume.

No room in the PC Companion middle?

Based on new product introductions, Hewlett-Packard seems to be the only vendor that still believes in a market for pocket sized handhelds with a keyboard. According to industry analysts, the huge growth market in the next three to five years are two classes: the Palm-size and the subnotebook-sized PCs. Pocket H/PC sales will be flat.

I don't agree. Even if one buys the vertical-market-only theory for handheld sales described above, there are many mobile professionals that need small devices with keyboards. I think HP has a real coup in this market with the Jornada 680, and that can only help the sales of its other Windows CE devices in the corporate world.

PC Companions will primarily be communications devices

For years the handheld has been a personal organization tool. That is, people mainly used them for PIMs: contact management, appointments, tasks, calculation, and database work. Many believe that in a future wireless world, handhelds will be used mainly for e-mail, the Web, and data transfer. PIM functionality, although welcome, will not be the compelling reason to own them.

"Why buy a Windows CE H/PC Pro when I can get a Windows 98 notebook for only a few hundred dollars more?"

I continue to be surprised that even the people who should know better still don't get it. I would much rather carry an H/PC Pro than a notebook when traveling. Long battery life, simplicity of operation, light weight, small size, instant on, fast application start, no moving parts (more rugged) make the H/PC Pro my choice for travel. Also, since the H/PC Pro comes with a full suite of built-in software, the price spread between device types is really more than a few hundred dollars. Yes, I occasionally need a Windows 98 application on the road, or wish that I could access the full version of Outlook on my H/PC Pro.

PalmPilot verses Windows CE: and the winner will be . . . ?

Whenever the Palm and Windows CE market is discussed, strong differing opinions emerge. I personally believe that in the end, Windows CE will dominate. As I mentioned in a previous column, the Palm is an easy-to-use and useful device, but with limited functionality. I don't see how, over time, Palm's manufacturer, 3COM, has a chance to do anything more than perpetuate a relatively small, niche, Mac-like following. With Microsoft behind the scenes and the likes of Philips, Everex, HP, Compaq, and Casio competing to create the best Palm-size device, Windows CE should emerge the dominant force.

There is no question that 3COM's Palm currently has tremendous dominance, momentum and support in the palm-size marketplace. But so did WordPerfect and Lotus 1-2-3 in the PC software world ten years ago.

Consumers have lots of choices and don't have a clue

How does the average consumer interested in a handheld make a choice? He visits his electronics store or goes Web shopping, and he finds a lot of similar looking devices. Maybe he has heard of the Palm Pilot or recognizes the Compaq or HP name. He may have no idea about Windows CE. How does he differentiate between devices? If he is looking for a notebook and finds a "great deal" on a Windows CE H/PC pro, will he be happy when he gets home and realizes that the Windows 98 software he heard about won't run on his new machine? Many I spoke with feel that Microsoft and OEMs must do a lot more advertising to educate the public.

What do you think about this conventional wisdom? Email me at hal@thaddeus.com or Editor Rich Hall at rich@thaddeus.com. ■

Hal Goldstein (hal@thaddeus.com) is Publisher and Executive Editor of *Handheld PC Magazine* and president of Thaddeus Computing. He has published, edited, and written for five magazines on portable computing since founding Thaddeus Computing in 1985.

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